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Emergency Health Series A-10

EMERGENCY HEALTH SERVICES GLOSSARY

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U. S. DEPARTMENT OF HEALTH, EDUCATION, AND WELFARE Public Health Service

EMERGENCY HEALTH SERVICES GLOSSARY

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PREFACE

This collection combines in a single reference document definitions and abbreviations relating to emergency health and medical services from 21 separate glossaries and other sources.

Although the Glossary was designed primarily for use by health and medical professional personnel, we attempted, in compiling it, to consider the needs of the many others concerned about or involved in the provision of emergency health services.

We have omitted references to predecessor agencies which no longer exist (e.g., Federal Civil Defense Administration, Office of Civil and Defense Mobilization) and attempted to keep the number of duplicate definitions to a minimum. We have, however, retained overlapping definitions which show some difference in wording.

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A

ABM. Anti-ballistic missile (system). (1)

A-BOMB. Abbreviation for atomic bomb. (20)

ABSORBED DOSE. The amount of energy imparted by nuclear (or ionizing) radiation to unit mass of absorbing material. The unit is the rad. See Dose, Rad. (20)

ABSORPTION. As applied to gamma (or X-) radiation it is strictly the process (or processes) resulting in the transfer of energy by the radiation to an absorbing material through which it passes. In this sense, absorption involves only the photoelectric effect and pair production. However, the term is frequently used interchangeably with attenuation, which includes the Compton effect; absorption then includes both the removal and scattering of photons. See Attenuation, Compton Effect, Pair Production, Photoelectric Effect, Scattering. (20)

The capacity of water-bearing material to absorb water after gravity water has been removed. It is equal to the specific yield of the material, except in cases when such material suffers compaction from the burden of overlying material when ground water has been removed from it, in which case allowance must be made for the effect of such compaction. (17)

The taking up of one substance into the body of another. (16)

The reduction of radiation intensity as a result of the transfer of energy from the radiation to a substance through which it passes. (15)

The process by which radiation imparts some or all of its energy to any material through which it passes. (3)

ABSORPTION COEFFICIENT. A number characterizing the ability of a given material to absorb (or attenuate) radiations of a specified energy. The linear absorption coefficient expresses this ability per unit thickness and is stated in units of reciprocal length (or thickness). The mass absorption coefficient is equal to the linear absorption coefficient divided by the density of the absorbing material; it is a measure of the absorption ability per unit mass. (20)

ACQUISITION. Sensing, observing, measuring, surveying or otherwise determining or describing the state of the earth, the ocean, the atmosphere and the magnitude of the phenomena (e.g., data gathering by field parties, meteorological observations). Computations, recordings, and presentations directly associated with these actions to produce a service or product are part of acquisition. (9)

ACCRETIONS. Increases by external additions. (19)

ACIDITY. In water supply, classified as - Carbon dioxide acidity which does not affect methyl orange but changes phenolphthalein indicator from pink to colorless. Mineral acidity which turns methyl orange indicator red. (17)

ACQUIRED IMMUNITY. Immunity acquired by the individual during his lifetime. It may be "actively acquired" from direct contact with a microorganism or a toxin either upon a natural infection or through vaccination. "Passively acquired" immunity is acquired by using antibodies produced by another, and offers only temporary protection. (6)

ACRE-FOOT. A term used in measuring the volume of water, equal to the quantity of water required to cover 1 acre 1 foot in depth, or 43,560 cu. ft. (17)(16)

ACTIVATED SLUDGE. A flocculent assemblage of microorganisms, non-living organic matter, and inorganic materials. (19)

ACTIVATION DETECTOR. A material used to determine neutron flux or density by virtue of the radioactivity induced in it as a result of neutron capture. See Neutron Flux, Threshold Detector. (20)

ACTIVE MATERIAL. Material, such as plutonium and certain isotopes of uranium, which is capable of supporting a fission chain reaction. Active material is also called fissionable and nuclear material. (3)

ACTIVITY COEFFICIENT. The ratio of the activity of a solution to its concentration. (19)

ACTIVITY EQUILIBRIUM CONSTANT. A value relating the equilibrium activities of reactants and products in a solution at a given temperature. (19)

ACTIVITY ION PRODUCT. A value relating the equilibrium activities of the dissociated forms of a slightly ionizable compound in solution at a given temperature. (19)

ACTIVITY. Method employed to achieve objectives (i.e., Provision of Beneficial Services, Provision of Facilities, etc.) (13)

ACTIVITY OF A SOLUTION. The apparent concentration of a solution. (19)

ACTIVITY SOLUBILITY PRODUCT. A value relating the equilibrium activities of the dissolved and undissolved forms of a compound in solution at a given temperature. (19)

ACTUAL HORSEPOWER. Often referred to as Line to Water Horsepower. It is the overall theoretical divided by the overall efficiency. It may also be described as the total horsepower required to overcome all frictional and other losses to produce a specified discharge. (10)

ADIZ. Air Defense Identification Zone. (1)

ADMINISTRATION. The planning, facilitation, execution, evaluation and control of services. (9)

ADP. Automatic data processing. (1)

ADSORPTION. The adherence of dissolved, colloidal, or finely divided solids on the surfaces of solid bodies with which they are brought into contact. (16) (17)

A change in concentration of gas or solute at the interface of a two-phase system. (17)

A/E. Architect/Engineer. (1)

AERATION. The bringing about of intimate contact between air and a liquid by one of the following methods: Spraying the liquid in the air; bubbling air through the liquid; or by agitation of the liquid to promote surface absorption of air. (17)(16)

AERATOR, BAFFLE. An aerator wherein baffles are provided to cause turbulence of flow. (16)
Coke Tray. An aerator in which the water is passed or sprayed through coke-filled trays. (16)

AEROBIC RESPIRATION. A biochemical reaction in which materials combine with oxygen to produce energy. Synonymous with biological oxidation. (19)

AEROBIOSIS. Living processes taking place in the presence of oxygen. (19)

AEROSOL. A suspension of very small particles, either liquid or solid, in air. The particles are so small, less than 10 microns in diameter, that they remain suspended for considerable periods of time instead of settling out. Aerosols are an important form of dissemination for both BW and CW agents. Common examples of aerosols are those produced by household atomizers, DDT bombs, and garden dusters. (7)(6)

AFTERWINDS. Wind currents set up in the vicinity of a nuclear explosion directed toward the burst center, resulting from the updraft accompanying the rise of the fireball. (20)

AGPC. U. S. Army Adjutant General Publications Center. (1)

AIR-AGITATION. The process of agitating sand in a rapid sand filter during the washing by injecting air under low pressure into bottom layers of the sand bed. (17)

AIR BINDING. The clogging of a filter, pipe, or pump due to the presence of entrained air. (16)(17)

A condition occurring in the soil as a result of the increase in the pressure of the air trapped in the interstices thereof, which causes a diminution of the rate of infiltration or water into the soil. (17)

AIRBORNE CONTAMINATION. Radioactive material in the form of a dust or gas that is dispersed (floating) in the air. (14)

AIRBURST. Detonation of explosive ordnance (nuclear or other) in the air. For nuclear weapons this means high enough so that the fireball does not touch the ground. See Surface Burst. Blast damage is most widespread. Initial radiation from a nuclear explosion is a definite personal hazard for 1 - 2 minutes. Heat gives severe burns to unprotected persons. Immediate fallout is not as serious an effect as fallout from a surface burst. See Fallout. (8)

The explosion of a nuclear weapon at such a height that the expanding ball of fire does not touch the earth's surface. There is very little early fallout from such a detonation. (15)

The explosion of a nuclear weapon at such a height that the expanding fireball does not touch the earth's surface when the luminosity is a maximum (in the second pulse). (1)(20)

AIR CHAMBER PUMP. Displacement pump equipped with an air chamber in which air is alternately compressed and expanded by the water displaced by the pump, with the result that the water is discharged at a more even rate. (2)

AIR LIFT PUMP. Pump used largely in lifting water from wells. Air under pressure is discharged as fine bubbles into water at the bottom of the well. The bubbles mix with the water, reducing the apparent specific gravity of the air-water mixture, causing it to rise to the discharge outlet. (2)

ALERT SIGNAL. See Attention Signal. (1)

ALGAE. Primitive plants, one or many-celled, usually aquatic and capable of elaborating their foodstuffs by photosynthesis. (16)(17)

Uncellular plants. (19)

ALGICIDE. Any substance which kills algae. (16)

ALKALINITY. A term used to represent the content of carbonates, bicarbonates, hydroxides, and occasionally borates, silicates, and phosphates in water. It is expressed in parts per million of calcium carbonate. (17)(16)

ALLIED MEDICAL PERSONNEL (ALSO PARAMEDICAL PERSONNEL). Those personnel whose functions are related to the practice of medicine; included may be: dentists, nurses, physical therapists, dietitians, pharmacists, X-ray and laboratory technicians, as well as others. (11)

ALLOCATION. A procedure whereby the Office of Civil and Defense Mobilization or other designated Government agencies authorize a time-phased (usually by calendar quarter) allotment of materials which are in high demand, but short in supply. The term usually applies to basic materials used in manufacture or construction such as copper, aluminum, and nickel rather than finished consumer products. (11)

ALLOCATION (GENERAL) (COMMUNITY SHELTER PLANNING). The process of allocating areas of population to areas of shelter concentration. (1)

(SPECIFIC) (COMMUNITY SHELTER PLANNING). The process of allocating geographically defined areas of population to a specific shelter facility or group of shelter facilities. (1)

ALPHA DETECTOR. Instrument for detection of alpha radiation. (14)(18)

ALPHA PARTICLE. A particle emitted spontaneously from the nuclei of some radioactive elements. It is identical with a helium nucleus, having a mass of four units and an electric charge of two positive units. Alpha particles do not penetrate the skin and are dangerous only if emitted by material that has been ingested, inhaled, or has entered the body by other means. See Radioactivity. (8)(3)(20)

A particle emitted spontaneously from the nuclei of some heavy radioactive elements. It has little Civil Defense significance. (15)

ALPHA PARTICLES (ALPHA RADIATION). A helium nucleus consisting of two protons and two neutrons with a double positive charge. (14)

ALPHA RADIATION. Heavy particles with short range of travel and easily screened out by intact skin or sheet of paper. This radioactive material is dangerous in open wounds or if inhaled or ingested, because when deposited in bone or other tissues it cannot be removed. (18)

ALUM, BLACK. Water works alum containing a small percentage of activated carbon. (16)

AMERICAN NATIONAL RED CROSS (ANRC). A quasi-governmental agency largely for relief of suffering and welfare activities during war and disaster. The ANRC operates under a Congressional charter and is supported by the people. Internationally, it operates in accordance with the Treaty of Geneva. (1)

ANALYSIS, BACTERIAL. The examination of water to determine the presence, number, and identification of bacteria; more commonly called bacterial examination. (16)

ANAEROBIOSIS. Living processes taking place in the absence of oxygen. (19)

(CHEMICAL). Analysis by chemical methods to show the composition and concentration of substances. (16)

(MICROSCOPIC). The examination of water to determine the presence and amounts of plant and animal life, such as algae, diatoms, protozoa, crustacea, etc., as an indication of the source of the water, pollution by sewage, progress of stream purification, and forms of organic life which might cause objectionable tastes, odors, or appearances, or interfere with filtration. More commonly termed microscopic examination. (16)

(WATER). The determination of the physical, chemical, and biological characteristics of water. Such analyses involve usually four different kinds of examinations, bacterial, chemical, microscopic, and physical. (16)

ANGSTROM. A unit of length, represented by A, equal to 10^8 centimeter. It is commonly used to express the wave lengths of electromagnetic radiations in the visible, ultraviolet, and X-ray regions. (20)

ANRC. American National Red Cross. (1)

ANTIBIOTIC. Substances produced by and obtained from living cells, usually those of lower plants, such as bacteria and molds; they are antagonistic to other forms of life, including pathogenic organisms. Examples are penicillin and streptomycin. Some may also be produced synthetically. (6)

ANTIBODY. A specific substance produced by the body in reaction to a specific foreign body (antigen), such as bacteria and toxins; examples are antitoxins and agglutinins. (6)

ANTIGEN. Any substance which when introduced in the body stimulates the formation of an antibody. Antigens are usually protein in nature and react in **an antagonistic** manner with specific antibodies. (6)

ANTISERUMS. Serums containing an antibody or antibodies. It may be obtained from an animal subjected to an antigen either by injection or as the result of an infection. (6)

ANTITOXINS. A substance found in the blood serum or other body fluids which is specifically antagonistic to a toxin. (6)

APPURTENANCES, WATER SYSTEM. Structures, devices, and appliances, other than pipe and conduit, which are used in connection with a water distribution system, such as valves, hydrants, corporation cocks, services, etc. (16)

AQUEDUCT. A conduit, usually of considerable size, used to convey water. The conduit may consist of one or more of the following: canal, pipeline, tunnel, siphon, or so-called "inverted siphon". (16)(17)

AQUIFER. A geologic formation that is water bearing, and which transmits water from one point to another. (16)(17)

ARCHING. In the case of a buried structure, it is the tendency for the soil particles to lock together in the form of an arch, with the result that part of the stress is transmitted around the structure instead of through it. (20)

ARCHITECT AND ENGINEER PROFESSIONAL DEVELOPMENT SERVICES. An OCD program which funds professional advice by fallout shelter analysts to architects and consulting engineers designing new buildings, to advise on how fallout shelter may be incorporated at little or no cost, through the use of "slanting" techniques in design. The service is provided on request from local CD to the OCD Region. (1)

ARCHIVING. Includes the handling and processing of large quantities of environmental data with particular regard to storage, maintenance, and retrieval. (9)

AREA OF INFLUENCE. The surface area surrounding a well, or group of wells, during pumping, within which the water table or other piezometric surface is lowered by withdrawal of the water. The area varies in extent with the rate and duration of pumping. (17)(16)

AREA WARNING CIRCUIT. That portion of the National Warning System (NAWAS) which lies within an OCD region and connects the Warning Points in that area with the Region. (1)

ARSENICALS. A class of blister gases containing arsenic. A typical example is Lewisite, which is somewhat more volatile than mustard gas and is also less stable. The arsenic content constitutes a serious hazard in terms of contamination of foods. (7)

ARTESIAN BASIN. A subsurface water basin where the water is under sufficient pressure, because of overlying confining material, to rise above the zone of saturation if given an opportunity to do so. (17)

ARTESIAN. An adjective applied to ground water, or things connected with ground water, such as a well, underground basin, etc., where water is under pressure and will rise to a higher elevation if afforded an opportunity to do so. (16)

ASPR. Armed Services Procurement Regulation. (1)

ASSIMILATION. The absorption and utilization of a nutrient by an organism. (19)

ATOM. The smallest particle of an element that still retains the characteristics of that element and which is capable of entering into a chemical reaction. (3)

The smallest particle of an element which is capable of entering into a chemical reaction; composed of a nucleus of protons and neutrons around which electrons revolve. (8)

ATOM. The smallest (or ultimate) particle of an element that still retains the characteristics of that element. Every atom consists of a positively charged central nucleus, which carries nearly all the mass of the atom, surrounded by a number of negatively charged electrons, so that the whole system is electrically neutral. See Element, Electron, Nucleus. (20)

ATOMIC BOMB (OR WEAPON). A term sometimes applied to a nuclear weapon utilizing fission energy only. See Fission, Nuclear Weapon. (20)

ATOMIC CLOUD. An all-inclusive term for the mixture of hot gases, smoke, dust, and other particulate matter from the bomb itself and from the environment, which is carried aloft in conjunction with the rising ball of fire produced by the detonation of a nuclear (or atomic) weapon. (8)(11)

See Radioactive Cloud. (20)

ATOMIC ENERGY COMMISSION (AEC). The Commission established by the Atomic Energy Act to provide for the development, use, and control of atomic energy. (1)

ATOMIC MASS UNIT (AMU). 1/12 of the mass of one neutral atom of ^{12}C. (3)

ATOMIC NUMBER (Z). Number of orbital electrons in a neutral atom, or the electric charge on the nucleus of an atom, or the number of protons in the atomic nucleus. (3)

ATOMIC NUMBER. See Nucleus. (20)

ATOMIC WEAPONS. See Nuclear Weapon. (3)

ATOMIC WEIGHT. The relative weight of an atom of the given element. As a basis of reference, the atomic weight of the common isotope of carbon (carbon 12) is taken to be exactly 12; the atomic weight of hydrogen (the lightest element) is then 1.008. Hence, the atomic weight of any element is approximately the weight of an atom of that element relative to the weight of an hydrogen atom. (20)

The relative weight of an atom of an element compared with the weight of 1 atom of carbon taken as 12. A multiple of 1/12 of the weight of an atom of carbon. (3)

Relative weight of the atom of an element compared with the weight of one atom of oxygen taken as 16; hence, a multiple of 1/16 the weight of an atom of oxygen. (8)

ATROPINE (SULPHATE). A poisonous, white, crystalline alkaloid, extracted from belladonna, used hypodermically for treatment of nerve gas casualties. (7)

ATTACK. Any act or series of acts by an enemy of the United States causing substantial damage or injury to property or persons in the United States in any manner by sabotage or by the use of bombs, shellfire, or atomic, radiological, chemical, or biological means or other weapons or processes. Overt attack is any open attack. Covert attack is an undercover attack, that is, sabotage. (6)(7)

ATTACK WARNING. A civil defense warning that an actual attack against this country has been detected. (1)

ATTACK WARNING SIGNAL. A three to five minute wavering tone on sirens or short blasts on horns or other devices, repeated as deemed necessary. It means that an actual attack against this country has been detected and that protective action should be taken immediately. As a matter of national civil defense policy, the attack warning signal shall be used for no other purposes and have no other meanings. (1)

ATTENTION (OR ALERT) SIGNAL. A three to five minute steady tone used to get public attention in times of imminent peacetime emergencies, such as hurricanes, tornadoes, and floods. In addition to any other meaning or requirement for action as determined by local government officials, it shall mean to all persons in the United States, "Listen for essential emergency information." (1)

ATTENUATION. The process by which a beam of radiation is reduced in intensity when passing through some material. It is the combination of absorption and scattering processes. (3)

The reduction of intensity of radiation due to an interposed medium. (11)

Decrease in intensity of a signal, beam, or wave as a result of absorption of energy and of scattering out of the path of a detector, but not including the reduction due to geometric spreading, i.e., the inverse square of distance effect. See Absorption, Inverse Square Law. (15)(20)

ATTENUATION, RADIOLOGICAL. The decrease in intensity of a radiation beam caused by a barrier of material, such as concrete. The density and thickness of the barrier and the energy of the radiation determine the "attenuation" or decrease. (1)

AUDIOVISUAL SUPPORT CENTER (A-VSC). A center for the distribution of OCD motion pictures, with exception of prints sent directly to OCD Regions and States. (1)

AUTOMATIC CONTROL. Device or system for starting, stopping or controlling pump operation in relation to some variable such as time, pressure or flow rate. (2)

AUTOTROPHS. Microorganisms that use carbon dioxide as a sole source of carbon. (19)

AUTOVON. Automatic voice network. (1)

AVSC. Audiovisual Support Center. (1)

AVIRULENT. Not virulent. (6)

AXIAL-FLOW PUMP. Centrifugal pump in which flow is parallel to axis of pump and head is developed by a combination of vortex action and the lifting action of the vanes on the liquid. Also termed propeller pump. (2)

B

BACKFLOW. In pumping, the flow of water or other liquids into the distributing pipes of a potable water supply from any source or sources other then its intended source. (16)

The backing up of water through a conduit or channel in the direction opposite to normal flow. (16)

BACKGROUND RADIATION. Nuclear or ionizing radiations arising from within the body and from the surroundings to which individuals are always exposed. The main sources of natural background radiation are potassium-40 in the body, potassium-40 and thorium, uranium, and their decay products (including radium) present in rocks, and cosmic rays. (3)(20)(1)

BACKSIPHONAGE. The flowing back of contaminated or polluted water from a plumbing fixture or cross connection, into a water supply line, due to a lowering of the pressure in such line. (16)

BACKWASHING. The operation of cleaning a rapid or mechanical filter by a reversed flow of water. (16)

BACTERIA. Minute one-celled microorganisms which have no chlorophyl and multiply by dividing (fission). (6)

BACTERIA, COLIFORM GROUP. A group of bacteria predominantly inhabitants of the intestine of man, but also found on vegetation, including all aerobic and faculative anaerobic gram-negative, nonspore-forming bacilla that ferment lactose with gas formation. This group includes five tribes of which the very great majority are eschericheae. The eschericheae tribe comprises three genera and ten species of which eschericheae coli and aerobacter aerogenes are dominant. The eschericheae coli are normal inhabitants of the intestine of man and all vertebrates whereas aerobacter aerogenes normally are found on grain and plants, and only to a varying degree in the intestine of man and animals. Formerly referred to as B. Coli, B. Coli Group, Coli-Aerogenes Group. (17)(16)

BALL-CHECK. Valve comprised of a seat and "floating" ball (sphere) that, when installed in a line, will permit flow in one direction as the ball is lifted off its seat, but that prevents flow in the opposite direction as the ball is forced to seat (close) under the influence of fluid pressure in the opposite direction. (2)

BALL OF FIRE. See Fireball. (8)(20)

BALLISTIC MISSILE EARLY WARNING SYSTEM (BMEWS). An electronic system for providing detection and early warning of attack by enemy intercontinental ballistic missiles (ICBM). (1)

BARRIER SHIELDING. Shielding accomplished by interposing a physical barrier between a given point and radiation source. (1)(15)

BAS. Bomb alarm system. (1)

BASAL METABOLISM. The quantity of energy required to support the life processes of any organism at rest and in a non-growing state. (19)

BASELINE OR BENCHMARK. The recorded status of the situation before action is taken to effect change, to which subsequent action or accomplishment can be referred. (9)

BASE MAP. "Base Map" does not have a specific civil defense definition. The term may not mean precisely the same thing to an urban planner, an engineer, or a civil defense director. In the CSP program, generally, the term has the same meaning as "basic map." The basic information usually includes existing streets, railroads, political boundaries, rivers, lakes, and other major physical features of the area drawn to scale. (1)

BASE SURGE. A cloud which rolls outward from the bottom of the column produced by a subsurface explosion. For underwater bursts the visible surge is, in effect, a cloud of liquid (water) droplets with the property of flowing almost as if it were a homogeneous fluid. After the water evaporates, an invisible base surge of small radioactive particles may persist. For subsurface land bursts the surge is made up of small solid particles but it still behaves like a fluid. A soft earth medium favors base surge formation in an underground burst. (20)

BASIC RESEARCH. (In health) consists of those studies and investigations into physiology and bodily functions and responses, and their interrelationships which are not aimed at any particular disease or condition. Examples would be studies in cell structure and studies in blood chemistry. (13)

BASIN. (1) A natural or artificially created space or structure, surface or underground, which is capable, by reason of its shape and the character of its confining material, of holding water. The term is sometimes used for a receptacle midway in magnitude between a resevoir and a tank. (2) A large slip or dock partially surrounded by quays. Its water level is subject to fluctuations with the water level of the main body of water with which it connects. (3) The surface area within a given watershed. (4) A small area in an irrigated field or plot, surrounded by low earth ridges, and designed to hold irrigation water. (5) An area upstream from a subsurface or surface obstruction to the flow of water. (6) A shallow tank or depression through which liquids may be passed or in which they are detained for treatment or storage. (17)

(1) A natural or artificially created space or structure, surface or underground, which by reason of its shape and the character of its confining material, is capable of holding water. The term is sometimes used for a receptacle midway in magnitude between a resevoir and a tank. (2) The surface area within a given watershed. (3) A small area in an irrigated field or plot, surrounded by low earth ridges, and designed to hold irrigation water. (4) An area upstream from a subsurface or surface obstruction to the flow of water. (5) A shallow tank or depression through which liquids may be passed or in which they are detained for treatment or storage. (16)

Artesian: A subsurface water basin where the water is under sufficient pressure, because of overlying confining material, to rise above the zone of saturation if given an opportunity to do so. (16)

Coagulation: A basin employed for the coagulation of suspended or colloidal matter, with or without addition of a coagulant, in which the liquor is mixed gently to induce coagulation, flocculation, and agglomeration, in preparation for subsequent sedimentation. (16)

Ground-Water: A pervious formation with sides and bottom of relatively impervious material, in which ground water is held or retained. (16)

BATCH PROCESS. A process in which there is no inflow or outflow. (19)

BDSA. Business and Defense Services Administration. Situated in the Department of Commerce, this Agency administers the authority delegated to the Secretary of Commerce under the Defense Production Act. The Agency is responsible for carrying out a program related to current defense production, long-range industrial preparedness, and service to the business community. (11)(4)(1)

BEARINGS. Mechanical device or arrangement to provide for support of, or to provide for easy movement of, a moving part of a pump. (2)

BEARING WALL. A wall which supports (or bears) part of the mass of a structure such as the floor and roof systems. (20)

BEP. Budget Execution Plan. (1)

BETA PARTICLE. A charged particle of very small mass emitted spontaneously from the nuclei of certain radioactive elements. Most (if not all) of the direct fission products emit (negative) beta particles. Physically, the beta particle is identical with all electron moving at high velocity. See Electron, Fission Products, Radioactivity. (8)(20)

A high-speed electron emitted spontaneously from the nuclei of certain radioactive elements. Most of the fission fragments from nuclear weapons emit beta particles. (15)

BETA PARTICLE (B). A negatively or positively (positron) charged particle having a mass equal to the electron and emitted spontaneously from the nuclei of certain radioactive elements. (3)

BETA PARTICLES (BETA RADIATION). Charged particles emitted from the nucleus and charge equal in magnitude to those of the electron. (14)

BETA RADIATION. Medium weight and range, can penetrate intact skin but for only a few millimeters depth. Can cause damage if ingested or absorbed in open wounds. (18)

BINDING, AIR. The clogging of a filter due to the presence of entrained air. (16)

BIOCHEMICAL OXYGEN DEMAND. The amound of oxygen required for the biological oxidation of the organic matter in a liquid. (19)

BIOLOGICALS. Pharmaceutical products of animal origin, capable of conferring an immunity by virtue of contained antibodies. A general term used to include vaccines, antiserums, toxoids, etc. (6)

BIOLOGICAL HALF-LIFE. See Half-Life. (11)

BIOLOGICAL HALF-TIME. The time required for the amount of a specified element which has entered the body (or a particular organ) to be decreased to half of its initial value as a result of natural, biological elimination processes. (3)(20)

BIOLOGICAL OXIDATION. A biochemical reaction in which materials combine with oxygen to produce energy. Synonymous with aerobic respiration. (19)

BIOLOGICAL WARFARE (BW). The intentional employment of living organisms, toxic biological products, and chemical plant growth regulators to produce death or casualties in man, animals, or plants. (6)(4)(11)

BIOLOGICAL WARFARE DEFENSE. Steps taken to prevent or minimize the effect of biological warfare attacks. These measures may include warning, detection, identification of agents, physical protection, decontamination, immunization, and treatment of casualties. (6)

BIOTIC COMPONENTS. Biological components. (19)

BLACK BODY. An ideal body which would absorb all (and reflect none) of the radiation falling upon it. The spectral energy distribution of a black body is described by Planck's equation: the total rate of emission of radiant energy is proportional to the fourth power of the absolute temperature (Stefan-Boltzmann law). (20)

BLAST. The brief and rapid movement of air or other fluid away from a center of outward pressure, as in an explosion; the pressure accompanying this movement. (8)

BLAST LOADING. The loading (or force) on an object caused by the air blast from an explosion striking and flowing around the object. It is a combination of overpressure (or diffraction) and dynamic pressure (or drag) loading. See Diffraction, Drag Loading, Dynamic Pressure, Overpressure. (20)

BLAST SCALING LAWS. Formulas which permit the calculation of the properties, e.g., overpressure, dynamic pressure, time of arrival, duration, etc., of a blast wave at any distance from an explosion of specified energy from the known variation with distance of these properties for a reference explosion of known energy, e.g., of 1 kiloton. See Cube Root Law. (20)

BLAST WAVE. A sharply defined wave of increased pressure rapidly propagated through a surrounding medium from a center of detonation or similar disturbance. (1)

A pulse of air in which the pressure increases sharply at the front, accompanied by winds, propagated continuously from an explosion. See Shock Wave. (15)(20)

BLISTER GASES. Gases used for casualty effect; injure the eyes and lungs and blister the skin. Formerly called Vesicant. (7)

BLOWOFF. A controlled outlet on a pipe line, tank, or conduit used to discharge water or accumulations of material carried by the water. (16)(17)

BMEWS. Ballistic missile early warning system. (1)

BOILER FEED PUMP. Pump designed and installed for the purpose of putting water into steam boilers. (2)

BOMB ALARM SYSTEM (BAS). A fully automatic system of detectors ringing key target areas in North America for transmitting reports of nuclear bursts to display centers. (1)

BOMB DEBRIS. See Weapon Debris. (20)

BOOM. A floating structure, usually of timber or logs, used to protect the face of a dam, or other structure built in or on water, from damage by wave action, by floating material being dashed against it by the waves, or to deflect floating material away from such a structure. (17)(16)

BOOSTER PUMP. Pump installed on a pipe line to raise the pressure of the water beyond that point on the distribution system. (2)

BOOSTER STATION. Pumping station located on a water distribution system for the purpose of increasing the pressure in the system beyond the station. (2)

BOWLS. Pump casing of deep well pumps. (2)

BPR. Bureau of Public Roads. (1)

BREAKAWAY. The onset of a condition in which the shock front (in the air) moves away from the exterior of the expanding fireball produced by the explosion of a nuclear (or atomic) weapon. See Fireball, Shock Front. (20)

BREMSSTRAHLUNG. Literally "braking radiation." Radiations covering a range of wave lengths (and energies) in the X-ray region resulting from the electrical interaction of fast (high-energy) electrons with atomic nuclei. Brehsstrahlung are produced by the interaction of beta particles with matter. See X-rays. (20)

BROADCAST STATION PROTECTION PROGRAM. An OCD program established in 1962 which provides Federal funds to extend fallout shelter protection, emergency power, and programing equipment to selected stations participating in the Emergency Broadcast System. The selection of broadcast stations to participate in the program is made by OCD. (1)

BROAD SPECTRUM ANTIBIOTICS. Antibiotics which are effective against a number of infectious agents, rather than being specific to a few. (6)

BU/CENSUS. Bureau of Census. (1)

BUFFER. A substance in solution that makes the solution more resistant to changes in pH. (19)

BUIC. Backup interceptor control. (1)

BURST. Explosion or detonation. See Air Burst, High-altitude Burst, Surface Burst, Underground Burst, Underwater Burst. (20)

BYPRODUCT MATERIAL, RADIOACTIVE. Any radioactive material (except special nuclear material) made radioactive by exposure to radiation incident to the process of producing or utilizing special nuclear material. (1)

C

C. Term used in hydraulic formulas to represent the effect of roughness of the water surfaces of conduit or stream channel on velocity of flow of water. (17)

CALIBRATION. The process of taking measurements or of making observations to establish the relation between two quantities. (17)

CALIBRATION RADIOLOGICAL INSTRUMENT. Determination and correction of variation in accuracy of radiological detection and measuring instruments. Radioactive sources are used to produce known dose rates. The variation in accuracy of a radiological instrument can be determined by measuring these known rates and the instruments calibrated to correct for any error. (1)

CALORIE. The amount of heat necessary to raise the temperature of 1 gram of water 1 degree centigrade. (8)

CANNED PUMP. Centrifugal pump designed to operate without packing. (2)

CAP. Civil Air Patrol. (1)

CAPACITY WELL. The rate at which water may be drawn from a formation through a well, to cause a drawdown of a stipulated depth. The usual units of measurement are gallons per minute per foot. (17)

CAPACITY, SPECIFIC, OF A WELL. The rate at which water may be drawn from a formation through a well, to cause a drawdown of a stipulated depth. The usual units of measurement are gallons per minute per foot. (16)

CAPILLARITY. The degree to which a material or object containing minute openings or passages, when immersed in a liquid, will draw the surface of the liquid above the hydrostatic level. Unless otherwise defined, the liquid is generally assumed to be water. (16)

CASCADE. A sudden drop installed in a waterway to produce agitation and aeration of the liquid flowing over. (16)

CASING. The housing in which a centrifugal pump's moving elements rotate. Also, in a well, the outside pipe extending from the ground surface to the bottom of the well. (2)

Metal pipe used to line the bore hole of a well. (17)

Perforated: A casing in a well where the water enters through holes which have been punched or cut in the casing. (16)

Well: Metal pipe used to line the bore hole of a well. (16)

CASUALTY. A person sick or injured and needing treatment, or one killed. (6)(8)(7)

CATABOLISM. Those chemical and physical processes continuously taking place in living organisms and cells by which protoplasm is used and broken down into simpler substances with the release of energy. (19)

CAVITATION. Formation of voids or discontinuity within a liquid owing to motion of the liquid itself, or of a body with respect to the liquid. Collapse of these voids exerts a force that causes pitting of the metal. If the pressure of the liquid within a system remains at all times above the vapor pressure of the liquid, no voids will be formed. (2)

The formation of a void or series of voids, within a body of liquid caused by the inability of the particles of the liquid to follow the paths that they would if it were a perfect fluid. This failure is in turn caused by lack of sufficient internal pressure to overcome inertia and thus to force the individual particles to take paths sufficiently curved to maintain a homogeneous mass of liquid. Therefore, cavitation is associated intimately with lowering of pressure primarily by the dynamic effect of velocity, especially at the axes of vortices and is accelerated by reduction in static pressure. The voids are filled with vapor of the liquid together with such gases as may be present in the liquid but driven out of solution by the reduction in pressure. The pressure in the liquid at the surface of the cavities is equal to the vapor pressure of the liquid corresponding to the temperature plus the partial pressure of the entrained gases. Cavitation is a term frequently misused to apply to the pitting caused by the action of the collapse of the voids. (17)

CBR. Chemical, biological and radiological. (1)

CDAE. Civil Defense Adult Education. (1)

CDUEP. Civil Defense University Extension Program. (1)

CE. Corps of Engineers. (1)

CE/BU DOCKS. U. S. Army Corps of Engineers/U. S. Navy Bureau of Yards and Docks (term superseded by CE/NAVFAC). (1)

CEMO. Canada Emergency Measures Organization. (1)

CE/NAVFAC. U. S. Army Corps of Engineers/U. S. Naval Facilities Engineering Command. (1)

CENTRIFUGAL FORCE. Outward force exerted when a mass or body rotates or moves in a curved path. (2)

CENTRIFUGAL PUMP. Pump consisting of an impeller fixed on a rotating shaft and enclosed in a casing having an inlet and discharge connection, with the rotating impeller creating pressure in the liquid by the velocity derived from centrifugal force. (2)

CHAIN REACTION. A process in which some of the products of a step in the process are instrumental in causing a continuation or magnification of the process. Specifically, a fission chain reaction in active material is continued or magnified by the neutrons which are one of the products of fission itself. (3)

A reaction, chemical or nuclear, yielding energy or products which cause further reaction of the same kind, and so becoming self-sustaining, as in fission, or splitting of the uranium atom by a neutron, whereby more neutrons are released which cause further fission. (8)

CHARACTERISTICS, PUMP. Interrelation of capacity, head, power, and efficiency of a pump. (2)

CHECKERBOARD CODE. Word used in civil defense exercises indicating simulated attack warning. (1)

CHECK VALVE. Device, inserted in a pipe, that opens to permit flow of fluid in one direction and closes to prevent flow in the opposite direction. (2)

CHEMICAL DOSIMETER. A self-indicating device for determining total (or accumulated) radiation exposure dose based on color changes accompanying chemical reactions induced by the radiation. (20)

CHEMICAL FEED PUMP. A diaphragm or piston pump designed especially for feeding chemicals into water or wastes. (2)

CHEMICAL, OXYGEN DEMAND. The amount of oxygen required for the chemical oxidation or organics in a liquid. (19)

CHEMICAL WARFARE (CW). The intentional employment of toxic and nontoxic chemical agents, flame, incendiaries, and smoke to accomplish an assigned mission. (11)(7)(4)

CHEMICAL WARFARE DEFENSE. Steps taken to prevent or minimize the effect of chemical warfare attacks. These measures may include warning, detection, identification of agents, physical protection, decontamination, first aid and treatment of casualties. (7)

CHEMOPROPHYLAXIS. Use of chemicals after exposure to a disease to prevent or minimize symptoms. (6)(4)(11)

CHLORAMINES. Compounds of organic amines or inorganic ammonia with chlorine. (17)(16)

CHLORINATION. The application of chlorine to water, sewage, or industrial wastes, generally for the purpose of disinfection, but frequently for accomplishing other biological or chemical results. (16)

CHLORINE. Heavy, greenish-yellow gas, used in the first gas attack by the Germans in World War I. Non-persistent, and the toxicity is low in comparison with modern war gases. (7)

CHLORINE-AMMONIA PROCESS. The application of chlorine and ammonia to water, or of ammonia to water containing chlorine, to provide combined residual chloramine for disinfection. (16)

CHLORINE RESIDUAL. The total amount of chlorine (combined and free available chlorine) remaining in water at the end of a specified contact period following chlorination. (16)

Ortho-Tolidine-Arsenite: The determination of residual chlorine, of its composition (combined available chlorine, free available chlorine), and of interfering substances in water, by the use of ortho-tolidine reagent, sodium arsenite reagent, and colorimetric standards. (16)

CHLORINE TEST, ORTHO-TOLIDINE. The determination of residual chlorine in water, sewage, or industrial wastes, using ortho-tolidine reagent and colorimetric standards. (16)

CHLOROPICRIN. Non-persistent, vomiting gas; also causing eye and lung irritation. Frequently used for fumigation of seed grain. (7)

CINCNORAD. Commander-in-Chief, North American Air Defense Command. (1)

CIRCULAR PROBABLE ERROR (CPE). Circular probable error is a term used in expressing weapon accuracy. (1)

CIVIL DEFENSE (CD). All those activities and measures designed or undertaken (1) to minimize the effects upon the civilian population caused or which would be caused by an attack upon the United States or by a natural disaster, (2) to deal with the immediate emergency conditions which would be created by any such attack or disaster, and (3) to effectuate emergency repairs to, or the emergency restoration of, vital utilities and facilities destroyed or damaged by any such attack or disaster. (11)(8)(1)(4)

CIVIL DEFENSE ADVISORY COUNCIL. Established by Congress. It is composed of the Director of the Office of Emergency Planning and twelve members appointed by the President. The purpose of the Council is to consult with the Chairman in his capacity as Presidential advisor with respect to general and basic policy matters relating to nonmilitary emergency preparedness. (1)

CIVIL DEFENSE EMERGENCY. The existence of such emergency may be proclaimed by the President, or by concurrent resolution of the Congress, if the President in such proclamation or the Congress in such resolution, finds that an attack upon the United States has occurred, or is anticipated. (1)

CIVIL DEFENSE WARNING SYSTEM (CDWC). The system over which a warning or other emergency information is transmitted throughout the nation. It comprises Federal, State, and local warning systems. (1)

CLAIMANCY ADJUDICATION. Decisions by the highest authority, usually the ODR, which must precede the proper allocation of resources and upon which allocation is based. (4)(11)

CLANDESTINE ORDNANCE. Destructive device covertly assembled in or introduced into this country. (11)

CLARIFICATION. The process of removing suspended or colloidal matter from a turbid liquid. (17)

See Sedimentation. (16)

CLARIFIER. A sedimentation tank. (19)

CLEAN WEAPON. One in which measures have been taken to reduce the amount of residual radioactivity relative to a "normal" weapon of the same energy yield. (1)(20)

CLOSE-COUPLED PUMP. Pump directly connected to its power unit without any reduction gearing or shafting. (2)

CLOUD CHAMBER EFFECT. See Condensation Cloud. (20)

CLOUD COLUMN. The visible column of smoke extending upward from the point of burst of a nuclear (or atomic) weapon. See Radioactive Cloud. (20)

CLOUD PHENOMENA. See Base Surge, Cloud Column, Fallout, Fireball, Radioactive Cloud. (20)

C/N RATIO. The weight ratio of carbon to nitrogen in an organic system. (19)

COAGULANT. A material, which, when added to water, will combine with certain substances ordinarily present and form a precipitate comprising floc particles more or less gelatinous in character, having the capacity to remove colloids from water. (17)

A material, which, when added to sewage or water, will combine with certain substances ordinarily present or which have been added to form a precipitate comprising floc particles more or less gelatinous in character, having the capacity to remove colloids from sewage or water. (16)

COAGULATION. (1) The agglomeration of colloidal or finely divided suspended matter by the addition to the liquid of an appropriate chemical coagulant, by biological processes, or by other means. (2) The process of adding a coagulant and necessary other reacting chemicals. (17)(16)

COAGULATION BASIN. A basin employed for the coagulation of suspended or colloidal matter, with or without addition of a coagulant, in which the liquor is mixed gently to induce coagulation, flocculation, and agglomeration, in preparation for subsequent sedimentation. (17)

COC. Combat Operations Center, North American Air Defense Command. (1)

COE. U. S. Army Corps of Engineers. (1)

COEFFICIENT. A numerical quantity determined by experimental methods, interposed in a formula which expresses the relation between two or more variables, for the purpose of taking care of the effect of special conditions, or of correcting a theoretical relation to one as found by experiment or actual practice. (17)(16)

Discharge: A coefficient by which the theoretical discharges of fluids through orifices, weirs, nozzles and other passages must be multiplied to obtain the actual discharge. (17)

Uniformity: The degree of variation in the size of the grains that constitute a granular material. It is the ratio of (1) the diameter of a grain of a size that is just too large to pass through a sieve which allows 60 percent of the material (by weight) to pass through, to (2) the diameter of a grain of a size that is just too large to pass through a sieve which allows 10 percent of the material (by weight) to pass through. The coefficient is unity for any material whose grains are all the same size, and it increases above unity with variation in size grain. (17)(16)

Roughness: A factor, in the Kutter, Manning, Bazin, and other formulas for computing the average velocity of flow of water in a conduit, which represents the effect of roughness of the confining material of the channel or conduit upon the energy losses in the flowing water. (16)

COLIFORM ORGANISMS. A group of bacteria recognized as indicators of fecal pollution. (19)

COLLECTIVE PROTECTORS. Filtering devices for purifying all air entering an enclosed space. These include a filter for removing particles and beds of activated charcoal for removing gases. They may be fitted with self-contained blowers or incorporated in the ventilating system of the facility. (6)(7)

COLLOIDS. (1) Finely divided solids which will not settle but may be removed by coagulation or biochemical action. (2) In soil physics, a discreet mineral particle less than 2 microns in diameter. (3) A finely divided dispersion of one material called the "dispersed phase" in another called the "dispersion medium." (16)(17)

COLUMN (OR PLUME). A hollow cylinder of water and spray thrown up from an underwater burst of a nuclear (or atomic) weapon, through which the hot, high-pressure gases formed in the explosion are vented to the atmosphere. A somewhat similar column of dirt is formed in an underground explosion. (20)

COMMAND CHANNEL. The organizational structure down which policy decisions of the President, or other persons in command of an activity are passed to those who have the responsibility for taking action and up which requests for policy decisions are made. (4)

The organizational structure (1) up which requests for policy decisions are made and, (2) down which policy decisions of the President, or other persons in command of an activity are passed to those who have the responsibility for taking action. (11)

COMMERCIAL. Business establishments, shopping centers, office, etc. (10)

COMMUNICATIONS CHANNEL. The organizational structure through which (1) policy decisions are applied to specific and specialized areas of activity, (2) reports on these specialized activities are passed, and (3) coordination among various specialized activities served. Communication channels exist among different staff units at each echelon and between similar special and staff units at different echelons. (11)(4)

COMMUNICATION. Transmission of data from one point to another by electrical or electronic means. The data may be raw or processed in alphanumeric, graphic, oral, or visual forms. This function includes message handling, and editing directly associated with transmission of data. (9)

COMMUNITY SHELTER PLAN (CSP). The document that allocates people to the best available fallout protection; tells the people about it; and identifies by Standard Location (SL) the amount and future unfilled requirement for standard shelter. (1)

COMMUNITY SHELTER PLANNING OFFICER, STATE (CSPOS). An employee of the State, funded by means of an OCD/State CSP contract. He is an urban planner whose mission is to provide CSP technical support for the State Civil Defense Director. He also assists in preparing plans for non-funded areas. (1)

COMPARATOR. In the field of environmental sanitation, a portable instrument used in testing alkalinity and acidity of and residuals of various disinfectant chemicals in liquids. (11)

COMPTON EFFECT. The scattering of photons (of gamma or X-rays) by the orbital electrons of atoms. In a collision between a (primary) photon and an electron, some of the energy of the photon is transferred to the electron which is generally ejected from the atom. Another (secondary) photon, with less energy, then moves off in a new direction at an angle to the direction of motion of the primary photon. See Scattering. (20)

COMPTON ELECTRON. An electron of increased energy ejected from an atom as the result of a Compton interaction with a photon. See Compton Effect. (20)

CONAD. Continental Air Defense Command. (1)

CONRAC. Continental Army Command. (1)

CONCENTRATION EQUILIBRIUM CONSTANT. A value relating the equilibrium concentrations of reactants and products in a solution at a given temperature. (19)

CONCENTRATION, HYDROGEN-ION. The weight of hydrogen ions in grams per liter of solution. Commonly expressed as the pH-value that represents the logarithm of the reciprocal of the hydrogen-ion concentration. (16)

CONCENTRATION IONIZATION CONSTANT. A value relating the equilibrium concentrations of the dissociated and undissociated forms of an ionizable compound in solution at a given temperature. (19)

CONCENTRATION SOLUBILITY PRODUCT. A value relating the equilibrium concentrations of the dissolved and undissolved forms of a compound in solution of a given temperature. (19)

CONDENSATION CLOUD. A mist or fog of minute water droplets which temporarily surrounds the fireball following a nuclear (or atomic) detonation in a comparatively humid atmosphere. The expansion of the air in the negative phase of the blast wave from the explosion results in a lowering of the temperature, so that condensation of water vapor present in the air occurs and a cloud forms. The cloud is soon dispelled when the pressure returns to normal and the air warms up again. The phenomenon is similar to that used by physicists in the Wilson cloud chamber and is sometimes called the cloud chamber effect. (20)

CONE OF INFLUENCE. The depression, roughly conical in shape, produced in a water table, or other piezometric surface, by the extraction of water from a well at a given rate. The volume of the cone will vary with the rate of withdrawal of water. Also called cone of depression. (17)

CONELRAD. A plan to deprive the enemy of electromagnetic radiation as an aircraft navigational aid without depriving the public of standard broadcast radio as a source of news and instruction. This system permits emergency broadcasting on 640 and 1240 kilocycles in areas served by standard broadcast stations authorized to operate during the CONELRAD (Radio Alert) period. (11)

CONFLAGRATION. Fastest spreading mass fire known. Driven by ground wind, the thermal, or superheated air column arising from burning materials is tilted earthward, igniting combustibles before actual flame contact. (8)

CONNECTION, SERVICE. Any pipe line, with its appurtenances, which branches off or connects with a water main, and carries water from the main to a consumer. (16)(17)

CONTACT SURFACE BURST. See Surface Burst. (20)

CONTAGIOUS DISEASE. An infectious disease capable of being transmitted from one individual to another either directly or through an intermediate animal host, vector, or the environment. Synonymous with COMMUNICABLE. Many infectious diseases are not contagious but require some special method of transmission or inoculation. (6)

CONTAINED UNDERGROUND BURST. An underground detonation at such a depth that none of the radioactive residues escape through the surface of the ground. See Crater. (20)

CONTAINMENT. Is that care directed to people who can't be cured completely of chronic disease, mental illness or conditions of old age, that will "contain" their illness or disability at the most minimal level. It includes long-term maintenance care in institutions and at home, as well as physical-mental rehabilitative treatment on an inpatient and outpatient basis. (13)

CONTAMINATED. Refers to material in or on which radioactive atoms are deposited. (14)(18)

CONTAMINATION. A general term signifying the introduction into water of microorganisms, chemicals, wastes or sewage, which renders the water unfit for its intended use. (17)

The deposit of radioactive material on the surfaces of structures, areas, objects, or personnel, following a nuclear (or atomic) explosion. This material generally consists of fallout in which fission products and other weapon debris have become incorporated with particles of dirt, etc. Contamination can also arise from the radioactivity induced in certain substances by the action of neutrons from a nuclear explosion. See Decontamination, Fallout, Induced Radioactivity, Weapon Debris. (20)(3)

The condition resulting from the deposit of radioactive material, biological warfare agents, other disease-producing agents, or chemical warfare agents in or upon structures, areas, bodies of water, personnel and objects, or caused by failure of normal sanitary safeguards. Includes food, water and medical supplies which may be contaminated with disease-producing agents as a result of an attack. (8)(6)(7)

CONTAMINATION, RADIOLOGICAL. The deposit of radioactive material on the surfaces of structures, areas, objects, or personnel following a nuclear (or atomic) explosion. This material generally consists of fallout in which fission products and other weapon debris have become incorporated with particles of dirt, etc. (1)

CONTINUITY OF GOVERNMENT. The continued operation of essential function of Federal government organizations during periods of national emergency. Included are all pre-emergency measures taken to assure a state of readiness for emergency continuity of government and eventual recovery to a peacetime operation. (4)(11)

CONTRIBUTIONS: FEDERAL FINANCIAL ASSISTANCE; ALSO CALLED MATCHING FUNDS. Funds provided by the Federal Government to match those provided by States for the purchase of supplies, equipment, emergency operating centers, and training, and for the payment of personnel salaries, administrative expenses, and reimbursement of student expense while attending authorized courses at the OCD Staff College. (1)

CONTROL ALGAE. In reservoirs, lakes, and streams, the elimination or inhibition of growth of microscopic plants which impart objectionable odors or tastes to the water. (16)

CONTROL AREA. An area having restricted personnel access by reasons of radioactive contamination and/or radiation exposure above allowable limits. Entrance to this area and length of stay is also restricted. (14)(18)

CONTROL POINT. Location on periphery of control area at which equipment, supplies and personnel are checked before entering or leaving the control area. '18)(14)

CONTROLLER, RATE OF FLOW. An automatic device in the effluent pipe of each filter in a rapid sand filtration plant for varying the pressure head in the effluent pipe, thus maintaining a constant head loss throughout the filtering run. (16)

CONTROLS. Devices that start, stop, or regulate the operation of pumps. (2)

CONUS. Continental United States. (1)

CONVENTIONAL WEAPON. A weapon depending upon nonnuclear explosives for its effectiveness. (1)

COOLING WATER PUMP. A pump used solely for pumping water through a cooling system. (2)

CORE, SHELTER. The interior portion of a multistory building that represents specific shelter areas. (1)

CORROSION. Damage to metal, a gradual eating away, caused by a chemical or electrochemical reaction (not to be confused with erosion). (2)

The gradual deterioration or destruction of a substance or material by chemical action, frequently induced by electrochemical processes, the action proceeding, inward from the surface. (16)(17)

COUNTERIONS. Ions of opposite charge. (19)

COVERT. Hidden, concealed. Covert attack refers to the stealthy employment either of accepted methods or of unusual or sabotage methods which might be used before or after the actual outbreak of hosbilities. See Overt. (6)(7)

CPE. Circular probable error. (1)

CRATER. The pit, depression, or cavity formed in the surface of the earth by an explosion. The apparent crater is the depression which is seen after the burst; it is smaller than the true crater, i.e., the cavity actually formed by the explosion, because it is covered with a layer of loose rock, etc. In a deep underground burst when there is no rupture of the surface, the resulting cavity is called a camouflet. (20)

CRENOTHRIX. A genus of bacteria characterized by unbranched attached filaments having a gelatinous sheath in which iron is deposited. They precipitate metallic deposits in pipe, etc., which sometimes color the water. They also, after their death, cause disagreeable taste and odor in the water. (16)(17)

CRITICAL MASS. The minimum mass of a fissionable material that will just maintain a fission chain reaction under precisely specified conditions, such as the nature of the material and its purity, the nature and thickness of the tamper (or neutron reflector), the density (or compression), and the physical shape (or geometry). For an explosion to occur, the system must be supercritical, i.e., the mass of material must exceed the critical mass under the existing conditions. See Supercritical. (20)(3)

CRITICAL ORGAN. That part of the body that is most susceptible to radiation damage under the specific conditions considered; determined by the following criteria: (1) Organ that concentrates greatest amount of radioactive material; (2) Indispensability of the organ to overall well-being of body; (3) The organ damaged by entry of radionuclide into body; (4) The radiosensitivity of the organ. (3)

CROSS CONNECTION. In plumbing, a physical connection through which a supply of potable water could be contaminated, polluted, or infected. A physical connection between water supplies from different systems. (16)

CSP. Community Shelter Plan. (1)

CSPOS. Community Shelter Planning Officer, State. (1)

CUBE ROOT LAW. A scaling applicable to many blast phenomena. It relates the time and distance at which a given blast effect is observed to the cube root of the energy yield of the explosion. (20)

CURIE. A unit of radioactivity. That quantity of a radioactive nuclide disintegrating at the rate of 3.7×10^{10} atoms per second. (3)

A unit of radioactivity; it is the quantity of any radioactive species in which 3.7×10^{10} nuclear disintegrations occur per second. The gamma curie is sometimes defined correspondingly as the quantity of material in which this number of gamma-ray photons are emitted per second. (20)

The curie is a measure of the activity or strength of a sample of radioactive material. It is the quantity of any radioactive species in which 3.7×10^{10} nuclear disintegrations occur per second. Because of the large size of this unit, the microcurie (one millionth of a curie or 10^{-6} curie) and the picocurie (micromicrocurie or 10^{-12}) are more commonly used. (15)

CUTIE-PIE AND JUNO COUNTERS. Moderately sensitive instruments for detecting large amounts of radiation. (18)

Moderately sensitive instruments for the detection of radiation (x-rays, gamma rays, and beta rays) in terms of rads or mrads. (14)

CUTOFF. (1) A more direct channel, formed either naturally or artificially, connecting two points on a stream channel, for the purpose of shortening the original length of the channel and increasing its slope. (2) A wall or diaphragm of concrete or steel, or a trench filled with puddled clay or impervious earth, extending into the foundation of a dam, and either making a watertight connection with the dam or its impervious facing, or extending into the body of the dam a considerable distance; its purpose is the prevention or reduction of passage of water under the dam and the foundation material, or through the upper layers of the foundation material. (17)

CYCLE, HYDROLOGIC. The complete cycle of phenomena through which water passes, commencing as atmospheric water vapor, passing into liquid and solid form as precipitation, thence along or into the ground surface, and finally again returning to the form of atmospheric water vapor by means of evaporation and transpiration. Also called Water Cycle. (16)

D

DA. Department of the Army. (1)

DAM. A barrier constructed across a watercourse for the purpose of (1) creating a reservoir, (2) diverting water therefrom into a conduit or channel, (3) creating a head which can be used to generate power, and (4) improving river navigability. Dams are classed as fixed and moveable. (16)

DAMAGE ASSESSMENT. (1) Attack analysis (determination of the extent and character of the attack); (2) Casualty estimation (determination of specific weapons effects on human resources); and (3) Individual resource assessment (determination of specific weapons effects on material resources). (12)

The appraisal or determination of the actual effects resulting from conventional or nuclear bombs and missiles. (1)

DAMAGE CLASSIFICATION. For the purpose of reporting damage assessments, damage to structures, or objects has been divided into three categories: (1)

Light Damage--A degree of damage to buildings resulting in broken windows, slight damage to roofing and siding, blowing down light interior partitions, and slight cracking of curtain walls. (Previously referred to as "Zone of D-damage."). Damage which does not prevent use of equipment or installations for the purposes intended. (1)

Moderate Damage--A degree of damage to principal members that precludes effective use of the structure or objects for the intended purpose unless major repairs are made. (Previously referred to as "Zone of C-damage."). (1)

Severe Damage--A degree of damage that precludes further use of the structure or object for its intended purposes without essentially complete reconstruction. (Previously referred to as "Zone of A-damage and B-damage."). (1)

DAMAGE CRITERIA. Standards or measures used in estimating specific levels of damage. (20)

DAMAGE ESTIMATION. Forecasting the probable effects of enemy attack upon the human and material resources located in a specified area. (1)

DAMAGE LIMITATION. The capability to limit damage to our population and industrial capacity in event of nuclear war; provided by the Strategic Offensive Forces, the Continental Air and Missile Defense Forces and Civil Defense. (1)

DAMAGED AREA. An area suffering from blast and thermal damage from a nuclear attack, including secondary fires. This area, or part thereof, may also suffer effects from radioactive fallout. The damaged area may be subdivided, depending upon the severity of damage, into zones. See Undamaged Area. (8)

DATE-TIME GROUPS (DTG). The date and time, expressed in digits and zone suffix, at which the message was prepared for transmission. Expressed in six digits, followed by zone suffix; first pair of digits denoting the date, the second pair of digits denoting the hour, and the third pair denoting the minutes. (1)

DCA. Defense Communications Agency. (1)

DCF. Data Collection Form. (1)

DCS. Defense Communications System. (1)

DDC. Defense Documentation Center. (1)

DEAMINATION. The splitting-off of an amino group from a compound to form ammonia. (19)

DEBRIS. See Weapon Debris. (20)

DECAY (OR BIOLOGICAL DECAY). The rate at which infectious organisms become non-infectious or die under unfavorable conditions of light, temperature, or humidity. The decay rate is a major factor influencing stability and persistence of BW agents. (6)

DECAY (OR RADIOACTIVE DECAY). The decrease in activity of any radioactive material with the passage of time, due to the spontaneous emission from the atomic nuclei of either alpha or beta particles, sometimes accompanied by gamma radiation. See Half-Life, Radioactivity. (8)(20)(11)(15)(1)

The decrease in activity of any radioactive material with the passage of time, due to the spontaneous emission of alpha, beta, or gamma radiation from the nuclei of unstable atoms. (3)

DECAY CURVE. The representation by means of a graph of the decrease of radioactivity with respect to time. (20)

DECAY CURVES, RADIOACTIVITY. Graph lines representing the decrease of radioactivity with the passage of time. (1)

DECAY PRODUCT (DAUGHTER PRODUCT). The daughter nuclide resulting from the radioactive disintegration of a radionuclide or series of radionuclides. A decay product may be either stable or radioactive. (3)

DECISION INFORMATION DISTRIBUTION SYSTEM. This system would transmit the alert signals and warning messages to government organizations at the Federal, State, and local levels, and to local broadcast stations. (1)

DECOMPOSERS. Heterotrophic bacteria and molds. (19)

DECONTAMINATION. Process in which radioactive material is removed. (14)(18)

The process of reducing the personnel hazard associated with an object or area by absorbing, destroying, neutralizing, making harmless, or removing chemical, biological, radiological, or toxicological agents clinging to or around it. (6)(7)(11)

The removal of radioactive contaminant from a material, e.g., water, air, or from surfaces of objects of interest, e.g., buildings, streets. (15)

Radiological: The reduction or removal of contaminating radioactive material from a structure area, object, or person. Decontamination may be accomplished by (1) treating the surface so as to remove or decrease the contamination; (2) letting the material stand so that the radioactivity is decreased as a result of natural decay; and (3) covering the contamination so as to attenuate the radiation emitted. Radioactive material removed in process (1) must be disposed of by burial on land or at sea, or in other suitable way. (8)(1)(20)(3)

DEEP WELL PUMP. Pump used for lifting water from deep wells, with the pumping mechanism usually located within the well at a considerable distance below the surface. (2)

DEFCON. Defense readiness condition. (1)

DEFENSE GENERAL SUPPLY CENTER (DGSC). A field facility of the Defense Supply Agency located at Richmond, Virginia. Is the National Inventory Control Point for the shelter stocking program. (1)

DEFENSE MOBILIZATION. The employment of government and the national economy for meeting essential civilian and military requirements. (11)

DEFENSE READINESS CONDITIONS (DEFCON). A graded warning code when accompanied by a number signifies a different degree of defense readiness from normal operating status to maximum readiness. (1)

DEFINITIVE MEDICAL CARE. The precise course of treatment or care to be given patients in treatment of definite conditions of disease, injury and disability. (4)(11)

DEGASIFICATION. The removal of dissolved gas from water to lessen its corroding power; it may be accomplished by mechanical methods, chemical methods, or a combination of both. (16)

DELAYED FALLOUT. See Fallout. (20)

DELAYED (WORLD-WIDE) FALLOUT. Small radioactive contaminated particles which ascend into the upper troposphere and into the stratosphere and are carried by winds to all parts of the earth, falling to earth over extended periods ranging from months to years. (15)

DEMAND, FIRE. The quantity of water and rate of flow required for fire fighting purposes based on types and sizes of structures and duration of the fire. (16)

DEMANGANIZATION. In water treatment, the removal of compounds of manganese from water. (16)

DEMINERALIZATION. The removal of dissolved mineral constituents from water. (16)

Total removal of all ions. (19)

DENITRIFICATION. A biological process in which gaseous nitrogen is produced from nitrite and nitrate. (19)

DENSITY. Weight per unit volume as compared with water at standard temperature and pressure. (10)

When referring to population, indicates persons per unit of area as acre, square mile, etc. (10)

DEPA. Defense Electric Power Administration. (1)

DETECTION. The determination that CW agents are present in the air, on surfaces, or in water or other materials. (7)

The determination that BW agents are present in the air, on surfaces, or in water or other materials. (6)

DEUTERIUM. An isotope of hydrogen of mass 2 units; it is sometimes referred to as heavy hydrogen. It can be used in thermonuclear fusion reactions for the release of energy. Deuterium is extracted from water which always contains 1 atom of deuterium to about 6,500 atoms of ordinary (light) hydrogen. See Fusion, Thermonuclear. (20)

D or ^2H: A heavy, stable isotope of hydrogen having 1 proton and 1 neutron in the nucleus. (3)

DEWLINE. Distant early warning line. (1)

DHEW. Department of Health, Education, and Welfare. (1)

DIAPHRAGM PUMP. Pump in which a flexible diaphragm or disk, generally of rubber, metal or composition material, is the operating part. It is fastened at the edges of a cylinder and when moved at its center by a piston mechanism in one direction, suction is created and liquid enters from the suction line; when moved in the other direction, pressure is created forcing the liquid out the discharge line. Check valves are required on both suction and discharge lines. (2)

DIDS. Decisions Information Distribution System. (1)

DIFFRACTION. The bending of waves around the edges of objects. In connection with a blast wave impinging on a structure, diffraction refers to the passage around and envelopment of the structure by the blast wave. Diffraction loading is the force (or loading) on the structure during the envelopment process. (20)

DIFFUSER. A porous plate or tube through which air is forced and divided into minute bubbles for the diffusion in liquids. Commonly made of carborundum, alundum, or silica sand. (17) (16)

DIFFUSER PUMP. Centrifugal pump in which liquid is discharged from the impeller through a fixed ring or diffuser vanes to provide better flow control and more efficient conversion of velocity head into pressure head. (2)

DIFFUSION BOARD. A wall-board like material capable of incorporation in home shelters. The material filters out particles and contains activated charcoal for removal of gases. It relies on diffusion for movement of air in and out, and for removal of carbon dioxide and water vapor from the enclosed space, avoiding the necessity for forced ventilation. (6)(7)

DILUTION RATE. Reciprocal of retention time. (19)

DIRECT MAIL SHELTER DEVELOPMENT SYSTEM (DMSDS). A direct mailing technique combined with personal contact by State or local government authority to reach owners and architects of specific new buildings being planned while there is still time to design fallout protection into the structure through the use of "slanting" techniques. (1)

DIRECT OPERATIONS. All activities involved in the direct provision of health services. (13)

DIRTY WEAPON. One which produces a larger amount of radioactive residues than a "normal" weapon of the same yield. See Salted Weapon. (20)(1)

DISASTER. Pertaining to FCC Rules and Regulations, the terms "disaster" or "disaster or other incident" are defined as meaning an occurrence of such nature as to involve the health and/or safety of a community or large area, or the health or safety of any group of individuals in an isolated area to whom no normal means of communication are available, and include, but are not limited to floods, earthquakes, hurricanes, explosions, aircraft or train wrecks, and consequences of armed attack. See Federal Disaster Act. (1)

DISCHARGE. (1) As applied to a stream, the rate of flow, or volume of water flowing in a given stream at a given place and within a given period of time. (2) The act involved in water or other liquid passing through an opening or along a conduit or channel. (3) The water or other liquid which emerges from an opening or passes along a conduit or channel. (16)(17)

Flow from any cutlet expressed in some unit of time as second, minute, etc. (10)

Liquid flowing from a pump; also that part of the pump from which water exits; also the quantity of liquid leaving a pump in a given unit of time. (2)

DISINFECTION. The killing of the larger portion of the harmful and objectional micro-organisms in, or on, a medium by means of chemicals, heat, ultraviolet light, etc. (17)(16)

Rendering free from live infectious organisms. (16)

To free from pathogenic organisms or to destroy them. (6)

DISINTEGRATION. Process of spontaneous breakdown of a nucleus of an atom resulting in the emission of a particle and/or a photon. (3)

DISSEMINATION. Providing environmental services to users; the interface between ESSA's operations and the users' operations. Distribution of informational bulletins or charts, detailed interpretation of operational guidance material, briefings, and communication devices or systems intended solely for getting a service product to users are included in this function. (9)

DISSOCIATION CONSTANT. A value relating the equilibrium activities or concentrations of the dissociated and undissociated forms of a compound in solution at a given temperature. (19)

DISTANT EARLY WARNING LINE (DEW LINE). A network of radar stations near the Arctic Circle. (1)

DISTILLATION. The process of raising the temperature of water or other liquids to a boiling temperature, carrying off the vapor produced and condensing the resulting vapor to liquid form by cooling. It is used to remove certain substances from a liquid, or to obtain a pure liquid from one which contains impurities or is a mixture of several liquids which have different boiling temperatures. (16)

DLSC. Defense Logistics Services Center. (1)

DMSDS. Direct Mail Shelter Development System. (1)

DOD. Department of Defense. (1)

DOME. The mound of water spray thrown up into the air when the shock wave from an underwater detonation of a nuclear (or atomic) weapon reaches the surface. (20)

DOSAGE. See Dose. (20)

DOSE. A quantity of ionizing radiation. The term dose is often used in the sense of exposure dose, expressed in roentgens, which is a measure of the total amount of ionization that the quantity of radiation could produce in air. (15)

A quantity (total or accumulated) of ionizing (or nuclear) radiation experienced by a person or animal. (1)

The absorbed dose, given in reps or rads, represents the energy absorbed from the radiation per gram of specified body tissue. Further, the biological dose, in rems, is a measure of the biological effectiveness of the radiation exposure. See Rad, RBE, Rem, Rep, Roentgen. (8)(20)(11)

The amount of ionizing radiation energy absorbed per unit mass of irradiated material at a specific location, such as a part of the human body. Measured in roentgens, rep, rem, and rad. (3)

DOSE RATE. As a general rule, the amount of ionizing (or nuclear) radiation to which an individual would be exposed or which he would receive per unit of time. It is usually expressed as roentgens, rads, or rems per hour or in multiples or submultiples of these units, such as milliroentgens per hour. The dose rate is commonly used to indicate the level of radioactivity in a contaminated area. See Survey Meter. (20)(11)(1)(8)(3)(15)

DOSE RATE CONTOUR LINE. A line on a map, diagram, or overlay joining all points of the same radiation dose rate at a given time. (1)

DOSIMETER. An instrument for measuring and registering total accumulated exposure to ionizing radiations. See Dosimetry. (8)(20)(11)(3)(15)(1)

OCD has procured three dosimeters for operational use. These are the CD V-730 (0-20 roentgens), CD V-740 (0-100 roentgens), and the CD V-742 (0-200 roentgens). For training purposes, the CD V-138 with a range of 0-200 milliroentgens is recommended. (1)

DOSIMETER CHARGER. An instrument used to reset a dosimeter to a beginning or zero reading. (1)

DOSIMETRY. The theory and application of the principles and techniques involved in the measurement and recording of radiation doses and dose rates. Its practical aspect is concerned with the use of various types of radiation instruments with which measurements are made. See Chemical Dosimeter, Film Badge, Survey Meter. (20)

DOUBLE SUCTION PUMP. Centrifugal pump that has suction pipes connected to both sides of the casing. (2)

DPW. Department of Public Welfare. (1)

DRAG LOADING. The force on an object or structure due to the transient winds accompanying the passage of a blast wave. The drag pressure is the product of the dynamic pressure and the drag coefficient which is dependent upon the shape (or geometry) of the structure or object. See Dynamic Pressure. (20)

DRAWDOWN. The lowering of the water surface in a well, and of the water table or piezometric surface adjacent to the well, resulting from the withdrawal of water from the well by pumping. Drawdown is the difference between static level and pumping level. (16)

Distance which water is drawn down in a well during pumping cycle. It is the actual distance from the static water level to the water level during the pumping cycle. Expressed in feet. (10)

DRIVE. Mechanical device for transmitting power and motion from drivers to the moving parts of pumps. (2)

DRIVER. The mechanical device that converts a source of power into motion of a pump's moving parts. (2)

DSA. Defense Supply Agency. (1)

DTG. Date-time-group. (1)

DTMS. Defense Traffic Management Service. (1)

DYNAMIC HEAD. Outmoded term, see Discharge Head. (2)

DYNAMIC PRESSURE. The air pressure which results from the mass air flow (or wind) behind the shock front of a blast wave. It is equal to the product of half the density of the air through which the blast wave passes and the square of the particle (or wind) velocity behind the shock front as it impinges on the object or structure. (20)

E

EAM. Electronic Accounting Machine. (1)

EAN. Emergency Action Notification. (1)

EARLY (LOCAL) FALLOUT. The radioactive contaminated particles which reach the earth within 24 hours after a nuclear explosion. (15)

EARTH DIATOMACEOUS. Extremely porous earth composed essentially of the siliceous skeletons of diatoms which are extremely minute unicelled organisms. (16)

EBS. Emergency Broadcast System. (1)

ECCHYMOSIS. An extravasation of blood; a discoloration of the skin caused by the extravasation of blood. (3)

ECOSYSTEM. Any segment of nature in which there is an exchange of materials between organisms and their environment. (19)

ED. Enumeration district. (1)

EDP. Electronic data processing. (1)

EEI. Essential elements of information. (1)

EFFECTIVE SIZE. An index of grain size of a filter sand. The grain size which is smaller than 90 percent (by weight) of grains in the sand and larger than 10 percent. (17)

EFFECTIVE TEMPERATURE. An empirical heat index based on human sensations. It combines the temperature, humidity, and movement of air into a sensibly equivalent temperature of saturated air with minimal air motion. (1)

EFFECTIVENESS. The degree to which an action accomplishes the specific end result toward which that action is aimed. (9)

Means the actual attainment of predetermined objectives. It is the net result of effort or activity and is stated in concrete, measurable units. (21)

EFFICIENCY. The capacity of an individual, organization, facility, operation or activity to produce results in proportion to the effort expended. (9)

EFFICIENCY, PUMP. Ratio of energy converted into useful work to the energy applied to the pump shaft, or the energy difference in the water at the discharge and suction ports, divided by power input at the meter. (2)

EFFLUENT. (1) A liquid which flows out of a containing space. (2) Sewage, water, or other liquid, partially or completely treated, or in its natural state, as the case may be, flowing out of a reservoir, basin, or treatment plant, or part thereof. (16)(17)

EFFORT (OUTPUT). The amount of output carried out in connection with a specific objective (i.e., 50,000 home nursing visits). (13)

EFPH. Evaluating Fallout Protection in Homes. (Forerunner of HFPS.) (1)

EFS. Emergency Feeding Service. (1)

EHS. Emergency Health Service. (1)

EIO. Emergency Information Officer. (1)

EIR. Emergency information readiness. (1)

EJECTOR. A device for moving a fluid or solid by entraining it in a high-velocity water or air jet. (Also, see Pneumatic Ejector.) (2)

EJECTOR PUMP. Also termed jet pump, consists of a nozzle discharging into a constricted throat leading from a suction section. Nozzle discharge is provided by a centrifugal pump located above. (2)

ELASTIC RANGE. The stress range in which a material will recover its original form when the force (or loading) is removed. Elastic deformation refers to dimensional changes occurring within the elastic range. See Plastic Range. (20)

ELECTROMAGNETIC RADIATION. A traveling wave motion resulting from oscillating magnetic and electric fields. Familiar electromagnetic radiations range from X-rays (and gamma rays) of short wavelength, through the ultraviolet, visible, and infrared regions, to radar and radio waves of relatively long wavelength. All electromagnetic radiations travel in a vacuum with the velocity of light. See Photon. (20)

ELECTROLYSIS. A form of corrosion occurring in metallic structures. It is caused by stray electric currents which pass through the earth or other conductor to the pipe, follow the pipe, and later pass again into the ground, and reach another conductor. Such corrosive action occurs where the current leaves the pipe, and metallic ions in the pipe, induced by the flow of electrical current, enter the soil at that point. This definition also applies to galvanic action or self-electrolysis. (17)(16)

ELECTROLYTES. Materials which when placed in solution make the solution conductive to electrical currents. (19)

ELECTRON. An electrically charged (negative) particle which is one of the basic components of the atom. (8)

A particle of very small mass, carrying a unit negative or positive charge. Negative electrons, surrounding the nucleus, are present in all atoms; their number is equal to the number of positive charges (or protons) in the particular nucleus. The term electron, where used alone, commonly refers to these negative electrons. A positive electron is usually called a positron, and a negative electron is sometimes called a negatron. See Beta Particle. (20)(3)

ELECTRON VOLT. A unit of energy equivalent to the amount of energy gained by an electron in passing through a potential difference of one volt.

a. Kev for thousand or Kilo electron volts.

b. Mev for million electron volts.

c. Bev for billion electron volts. (3)

The energy imparted to an electron when it is moved through a potential difference of 1 volt. It is equivalent to $1.6x10^{-12}$ erg. (20)

ELEMENT. One of the distinct, basic varieties of matter occurring in nature which, individually or in combination, compose substances of all kinds. Approximately ninety different elements are known to exist in nature and several others, including neptunium and plutonium, have been obtained as a result of nuclear reactions with these elements. (15)(20)

ELEVATION. Height above some base point or sea level, usually expressed in feet. (2)

ELEVATION HEAD. Energy possessed by a unit weight of fluid because of its elevation above some point. (2)

EMERGENCY BROADCAST SYSTEM (EBS). Consists of broadcast stations and interconnecting facilities which have been authorized by the Federal Communications Commission to operate in a controlled manner during a war, threat of war, state of public peril or disaster, or other national emergency--as provided by the Emergency Broadcast System Plan (FCDG-E-4.1). (1)

EMERGENCY INFORMATION READINESS (EIR). The second step of the CSP process which requires that the local government be prepared to advise its people on where to go and what to do in case of nuclear attack. (1)

EMO. Emergency Measures Organization (Canada). (1)

EMERGENCY MEASURES ORGANIZATION (EMO). The Canadian counterpart of civil defense. (1)

EMS. Emergency Medical Service. (3)

EMERGENCY OPERATING CENTER (EOC). The protected site from which civil government officials (municipal, county, State, and Federal) exercise direction and control in a civil defense emergency. (1)

EMERGENCY OPERATIONS SIMULATION TECHNIQUES (EOST). Emergency operations training for Emergency Operating Center (EOC) personnel, including civil government officials, under conditions of a simulated nuclear attack on the United States. (1)

EMERGENCY PUBLIC INFORMATION. Information which is disseminated primarily, but not unconditionally, at the actual time of an emergency; and in addition to providing information as such, frequently directs actions, instructs, and transmits direct orders. (1)

EMERGENCY RELOCATION SITE. The location to which a headquarters or field office may be evacuated during periods of emergency. (11)(4)

EMERGENCY WELFARE REGISTRATION AND INQUIRY (EWR&I). Program administered by DHEW through its own registries and in cooperation with the Safety Notification and Emergency Change of Address program of the U. S. Post Office to assist persons in locating and/or reuniting with their families during a civil defense emergency. (1)

ENDOGENOUS RESPIRATION. An auto-oxidation of cellular material that takes place in the absence of assimilable organic material to furnish the energy required for the replacement of worn-out components of protoplasm. (19)

END PRODUCT. The final output of an organization or system, identifiable and expressible in meaningful terms. (9)

ENERGY. The ability to do work. Energy (E) is the force (f) acting on a body to produce motion, multiplied by the distance (S) through which the force acts and the cosine of the angle (O) between the direction of force and the direction of motion. $E = fS \cos O$. Potential Energy is energy due to relative position, e.g., and elevated weight. Kinetic Energy is energy due to motion--a speeding auto or electron. Energy is measured in ergs, joules, ev, Mev, etc. (3)

ENERGY HEAD. Height of a hydraulic grade line above the center line of a conduit plus the mean velocity head in that section. (2)

ENIWETOK PROVING GROUNDS (EPG). An area in the Marshall Islands, including the Eniwetok and Bikini Atolls, used for nuclear (or atomic) tests. Formerly referred to as the Pacific Proving Grounds. (20)

ENTHALPY. Metabolizable energy. (19)

ENTROPY. That portion of metabolizable energy which is unavailable for the growth and maintenance of an organism. (19)

ENVIRONMENTAL CONTROL. Control of those factors of the environment such as water, food, vectors, air, safety, housing, and wastes disposal, that constitute an actual or potential threat to the health, safety, and well-being of the public. Control is by modification or elimination of specific environmental factors of by altering particular practices that link the individual to his environment, e.g., food handling or water treatment methods. (11)(4)

EO. Executive Order. (1)

EOC. Emergency operating center. (1)

EOD. Explosive ordnance disposal. (1)

EOP. Emergency operations plan. (1)

EOST. Emergency operations simulation techniques. (1)

EPGA. Emergency Petroleum and Gas Administration. (1)

EPI. Emergency Public Information. (1)

EPIDEMIC. A regional outbreak of an infectious disease which attacks many persons and spreads rapidly. (6)

EPIDEMIOLOGY. The study of disease outbreaks in an attempt to identify the source, determine the extent, and the probable mode of transmission and control measures. (6)

EPIZOOTIC. Any disease of animals which spreads rapidly and is widely diffused. (6)

EQUIVALENT LOSS. Loss in pressure when water passes through a valve or fitting, expressed in terms of the equivalent length of straight pipe which produces the same pressure loss. (17)

EQUIVALENT RESIDUAL DOSE (ERD). The accumulated dose of gamma radiation corrected for such biological recovery as may have occurred at a specific time. (1)

ER. Executive Reserve. (1)

ERYTHEMA. An abnormal redness of the skin caused by a variety of agents, including ionizing radiations. (3)

ESCHERICHIA COLI. A species of bacteria found in large numbers in the intestinal tract of warm blooded animals. (19)

ESS. Emergency Social Services. (1)

ESSA. Environmental Science Services Administration. (1)

ETM. Extension Training Memorandum. (1)

EVALUATION. The process of determining the extent to which predetermined objectives and levels of operation were attained. It is a method of assuring that what is planned actually takes place and the desired effect is achieved. (13)

The process of determining the value or amount of success in achieving a predetermined objective. It includes at least the following steps: Formulation of the objective, identification of the proper criteria to be used in measuring success, determination and explanation of the degree of success, recommendations for further program activity. (9)

EVALUATION OF EFFECTIVENESS. Is the process of determining the extent to which predetermined objectives are attained as a result of the implementation of the planned program. (21)

EVALUATION OF EFFICIENCY. Is the ratio of an input to an output. Typically, comparisons are made between resources and activities, activities and objectives and resources and objectives. The latter ratio is usually termed productivity. (21)

EVALUATION OF EFFORT. Is the process of determining the extent to which the activity was carried out as planned, both in quantitative and in qualitative terms. (21)

EVAPORATION. The process by which water passes from a liquid or solid state to vapor at temperatures below the boiling point. (17)

(1) The process by which water passes from a liquid state, at temperatures below the boiling point, to vapor. It is the principal process by which surface or subsurface water is converted to atmospheric vapor. (2) The quantity of water that is evaporated; the rate is expressed in depth of water, measured as liquid water, removed from a specified surface per unit of time--generally in inches or centimeters per day, month, or year. (16)

EXAMINATION OF WATER. **Bacterial:** Determination of the presence, number, and identification of bacteria.

Chemical: Determination of character and composition of matter contained in the water.

Microscopic: The examination of water to determine the presence and amounts of plant and animal life, such as algae, diatoms, protozoa, crustacea, etc., as an indicator of the source of the water, pollution by sewage, progress of stream purification, and forms of organic life which may cause objectionable tastes, odors, or appearances, or interfere with filtration. (17)

EXECUTIVE ORDER (EO). A rule or order having the force of law, issued by an executive authority of a government. (1)

EXECUTIVE RESERVES. Persons selected and trained for employment in executive positions in the Federal government during periods of emergency. (11)(4)

EXOTHERMIC. Heat liberating. (19)

EXPANDED FUNCTION TRAINING. Term used to refer to training now being recommended for allied medical personnel in functions outside and above their own sphere of activity, in preparation for carrying out expanded functions in emergency mass casualty situations. The American Medical Association, the Military Services, and other key groups now feel it is imperative that additional functions be performed under mass casualty conditions by persons other than physicians, not only to relieve physicians of functions which others can perform, but also to ensure that the fullest possible use is made of all available personnel resources. (11)

EXPECTANT WARD. In the interest of efficient medical management under emergency conditions it may be necessary to provide a holding ward for those so severely injured that they are not expected to survive, or who require such extensive care, surgery or drugs that the lives of other more easily saved patients would be endangered. (11)

EXPEDIENT WATER TREATMENT. The treatment of water under emergency conditions using improvised equipment and methods. (11)

EXPLOSIVE SYSTEM. That portion of a nuclear weapon which transforms the nuclear system from a subcritical to a supercritical state. (3)

EXPOSURE CONTROL. Procedures taken to keep radiation exposures of individuals or groups from exceeding a recommended level, such as keeping outside missions as short as possible. (15)

EXTENSION TRAINING MEMORANDUM (ETM). Memorandums issued by OCD Staff College Extension Training Department to Civil Defense University Extension Program Coordinators. Issuances are made as required to call attention to general publications of OCD, such as Information Bulletins, parts of the Federal Civil Defense Guide, and announcements pertaining to release of materials, equipment, etc., in support of CDUEP schools. (1)

EXTERNAL RADIATION. Exposure to ionizing radiations coming from a source outside the body. (15)

F

FAA. Federal Aviation Agency. (1)

FACULTATIVE AUTOTROPHS. Microorganisms that can use both carbon dioxide and organic compounds as carbon sources. (19)

FACULTATIVE BACTERIA. Bacteria having the ability to live and grow both in the presence of and in the absence of free oxygen. (19)

FALLOUT. The process or phenomenon of the fallback to the earth's surface of particles contaminated with radioactive material from the radioactive cloud. The term is also applied in a collective sense to the contaminated particulate matter itself. The early (or local) fallout is defined, somewhat arbitrarily, as those particles which reach the earth within 24 hours after a nuclear explosion. The delayed (or world-wide) fallout consists of the smaller particles which ascend into the upper troposphere and into the stratosphere and are carried by winds to all parts of the earth. The delayed fallout is brought to earth, mainly by rain and snow, over extended periods ranging from months to years. (8)(20)(11)(15)(3)

The radioactive debris, usually from a nuclear detonation, which is deposited on the surface after having been airborne. Local (or early) fallout is defined, somewhat arbitrarily, as those particles which reach the earth within 24 hours after a nuclear explosion. World-wide (or delayed) fallout consists of the smaller particles which ascend into the upper troposphere and into the stratosphere and are carried by winds to all parts of the earth. The world-wide fallout is brought to earth, mainly by rain and snow, over extended periods ranging from months to years. (3)

FALLOUT (RADIOACTIVE). The process or phenomenon of the fallback to the earth's surface of particles contaminated with radioactive material from a cloud of this matter formed by a nuclear detonation. The term is also applied in a collective sense to the contaminated particulate matter itself. The early (or local) fallout is defined, somewhat arbitrarily, as those particles which reach the earth within 24 hours after a nuclear explosion. The delayed (or world-wide) fallout consists of the smaller particles which ascend into the upper troposphere and into the stratosphere and are carried by winds to all parts of the earth. The delayed fallout is brought to earth mainly by rain and snow, over extended periods ranging from months to years. (1)

FALLOUT AREA. See Undamaged Area. (8)

FALLOUT CONTOURS. Lines joining points of equal dose rate, in R/hr, that define a fallout pattern. (1)

FALLOUT MONITORING STATION. A designated facility such as a fire station, police or public works building, or a community shelter which has a protection factor of at least 100 and relatively reliable communications. It may be established with a minimum of two trained radiological monitors but as promptly as feasible the number should be increased to four. (15)

FALLOUT MONITORING STATIONS (FMS). A protected facility such as a fire station, police or public works building, or a community shelter which has relatively reliable communications and a minimum of two trained radiological monitors. From this facility the monitors will measure and report unsheltered dose and dose rates on a scheduled basis. They will also be available to support the conduct of emergency operations. (1)

FALLOUT PATTERN. Characteristics of the process or phenomenon of the fallback of radioactive contaminated particles from a nuclear explosion to the earth's surface. (15)

FALLOUT SHELTER ANALYSIS (FSA) COURSE. Courses sponsored by OCD and offered to architects and engineers at various schools and universities throughout the country as an intensive 2-week session, or as an independent study course by correspondence. (1)

FALLOUT SHELTER ANALYST (FSA). An architect or engineer who has successfully completed a course in Fallout Shelter Analysis sponsored by OCD. (1)

FALLOUT SHELTER CRITERIA. A Protection Factor (PF) of 40 or greater, a minimum of 10 square feet of shelter floor space, and 65 cubic feet of space per person, and at least 3 cubic feet of fresh air per minute per person when capacity is based on minimum space requirements. In unventilated underground space, 500 cubic feet of space per person is required. To qualify for inclusion in the national inventory, a facility must afford protection for at least 10 persons in a shelter area. To qualify for normal stocking and marking, it must afford shelter for at least 50 persons. (1)

FAOUSA. Finance and Accounts Office, U. S. Army. (1)

FCC. Federal Communications Commission. (1)

FCDA. Federal Civil Defense Administration. (1)

FCDG. Federal Civil Defense Guide. (1)

FEASIBILITY TEST. A desk study to determine whether or not a plan is within the capacity of the resources which can be made available. (1)

FEDERAL CIVIL DEFENSE GUIDE (FCDG). A collection of documents prepared by OCD for guidance of State and local civil defense personnel. It describes the Federal programs, recommends actions to be taken at the State and local levels, and serves as a major source of technical and administrative information. (1)

FEDERAL CLAIMANT AGENCY. A designated Federal agency which has been assigned, for planning purposes, the responsibility for developing and/or assembling from associated claimant agencies data on the amounts of goods, services and manpower that will be required during stated future time periods to carry out its assigned program responsibilities. (12)

FEDERAL DISASTER ACT. Public Law 875, 81st Congress, as amended, gives the President broad powers to supplement the efforts and available resources of State and local governments in carrying out their responsibilities to alleviate suffering and damage resulting from major (peacetime) disasters. (1)

FEDERAL RESOURCE AGENCY. A designated Federal agency which has been assigned, for planning purposes, the responsibility in an emergency for regulating, controlling, or providing operational direction to the activities of a broad segment of the economy or a portion thereof. (12)

FILM BADGE. A small metal or plastic frame, in the form of a badge, worn by personnel, and containing X-ray (or similar photographic) film for estimating the total amount of ionizing (or nuclear) radiation to which an individual has been exposed. (20)

FILM BADGE DOSIMETER. Personnel monitoring device that allows for an estimate of cumulative radiation exposure of wearer. (18)(14)

FILM OPTICAL SENSING DEVICE FOR INPUT TO COMPUTERS (FOSDIC). A machine which reads microfilmed mark-sense forms and converts data thereon into magnetic data. (1)

FILTER. A device or structure for removing solid or colloidal material, usually of a type that cannot be removed by sedimentation, from water or other liquid. The liquid is passed through a filtering medium which may consist of a granular material such as sand, infusorial, or diatomaceous earth, anthracite coal, etc., finely woven cloth, unglazed porcelin, or even specially prepared paper. (16)(17)

Bed: Layers of material in a filter which remove impurities from a liquid or gas that is passed through. (17)

Rapid Sand Filter: Filter used to treat water previously treated by sedimentation and usually by coagulation. Characterized by a rapid rate of flow of water through the filter, approximately 2 gpm per square foot of filter area. (17)

Flow Sand Filter: Filter used to treat water not previously treated. Characterized by a slow rate of flow of water through the filter, approximately 3 to 6 million gallons per day per acre of filter area. (17)

Zeolite Filter: Filter used to soften water. Filter medium is zeolite, a substance which will remove calcium and magnesium from water, replacing them with sodium. Does not remove suspended matter from water. (17)

FILTERED DOWN TRAINING. Three step program of training from Federal level to Nationwide resource personnel to the lay public. As used in the Health Mobilization Division it is the program of training of reserve officers and other selected medical and public health personnel to prepare them to support and stimulate the instruction of the general population. (11)(4)

FINANCIAL PLAN. Spread of funds by program categories and subcategories in terms of dollars which permits comparison of cost to benefits. Comparison is provided through a program plan mechanism (result oriented) based on the same categories, subcategories and activities breaks. (13)

FINES. Finer-grained particles of a mass of soil, sand, or gravel. (17)

FIREBALL. The luminous sphere of hot gases which forms a few millionths of a second after a nuclear explosion and immediately starts to expand and cool. (8)

The luminous sphere of hot gases which forms a few millionths of a second after a nuclear (or atomic) explosion as the result of the absorption by the surrounding medium of the thermal X-rays emitted by the extremely hot (several tens of millions degrees) weapon residues. The exterior of the fireball in air is initially sharply defined by the luminous shock front and later by the limits of the hot gases themselves (radiation front). See Breakaway. (20)(1)

FIRE PUMP. A pump installed for the sole purpose of fighting fires; it has the capability of operating at full capacity and pressure immediately. (2)

FIRESTORM. Stationary mass fire, generating strong, in-rushing winds from all sides; the winds keep the fire from spreading while adding fresh oxygen to increase its intensity. Only a few American cities have the necessary characteristics of size and building density and type considered necessary to support a firestorm and then only when the climatic conditions are appropriate. (15)(1)(20)

A fire phenomenon arising when a vast area of combustibles becomes a huge mass fire, often involving several square miles. Superheated smoke and gases (thermal column) arising from the burning mass extend thousands of feet into cold air above and produce rain from moisture condensation. On perfectly calm days, the violent fire winds on the burning perimeter reach hurricane force and have been clocked at 30 miles per hour, 1½ miles away. At this stage, winds of such intensity close in to stop fire-spread. (8)

FISSION. The nuclear process whereby the nucleus of a heavy element splits into two or more nuclei of lighter elements and releases a substantial amount of energy. The most important fissionable materials are uranium-234, uranium-238, and plutonium-239. This process provides the energy for the nuclear weapons and nuclear reactors. (15)(8)(20)(11)(3)

FISSION FRACTION. The fraction (or percentage) of the total yield of a nuclear weapon which is due to fission. For thermonuclear weapons the average value of the fission fraction is above 50 percent. (20)(15)

FISSION PRODUCTS. A general term for the complex mixture of substances produced as a result of nuclear fission. The complex mixture of fission products contains about 200 different isotopes of 36 elements. (15)(8)(3)(20)

A distinction should be made between these and the direct fission products of fission fragments. Something like 80 different fission fragments result from roughly 40 different modes of fission of a given nuclear species (e.g., 235 uranium or 239 plutonium). The fission fragments, being radioactive, immediately begin to decay, forming additional (daughter) products, with the result that the complex mixture of fission products so formed contains about 200 different isotopes of 37 elements. (3)(20)

FISSIONABLE MATERIAL. See Active Material. (3)

FLASHBOARD. A low temporary barrier, usually wooden, placed along the crest of a dam spillway to increase storage capacity of a reservoir by letting the water rise above spillway level. It is built so it can be readily removed, lowered, and carried away by high flow or floods. (17)

A temporary barrier, of relatively low height and usually constructed of wood, placed along the crest of the spillway of a dam to allow the water surface in the reservoir to be raised above spillway level to increase the storage capacity. It is constructed so as to be readily removed or lowered, or carried away by high flow or floods. (16)

FLASH BURN. A burn caused by excessive exposure of bare skin to thermal radiation. See Thermal Radiation. (1)(20)(11)

FLASH REPORT (RADIOLOGICAL). A high priority report made by a monitor or EOC when the outside dose rate reaches or exceeds 0.5 R/hr. (1)

FLOAT, CONTROL. A float installed in a tank or body of liquid to control the pumps. (16)

FLOC. Small gelatinous masses, formed in a liquid by the addition of coagulants thereto or through biochemical processes or by agglomeration. (16)(17)

FLOCCULATION. Formation of floc by use of coagulating chemicals and mechanical agitation. (17)

FLOCCULATOR. An apparatus for the formation of floc in water. (16)

FLORA. Plant life. (19)

FLOW, LAMINAR. That type of flow in a stream of water in which each particle moves in a direction parallel to every other particle, and in which the head loss is proportional to the first power of the velocity. It is typical of groundwater movement under most conditions. It is sometimes designated streamline flow or viscous flow. (16)(17)

Normal: The flow which prevails the greatest portion of the time; the median flow or the average flow. (16)

Turbulent: That type of flow in which any particle of a liquid may move in any direction with respect to any other particle. In this type of flow the friction head varies approximately with the second power of the velocity. It occurs at velocities higher than Reynolds' critical velocity. Also called Sinuous or Tortuous Flow. (16) (17)

An open conduit, constructed of wood, masonry, or metal, and constructed on a grade; sometimes elevated. (16) (17)

Control: A flume arranged for measuring the flow of water, sewage, or other liquids, generally including a constricted section wherein a minimum energy head exists at all stages. (16)(17)

Parshall: A device for measuring the flow of liquid in an open conduit. (16)

FLOURESCENT ANTIBODIES. Antibodies stained with a dye which causes them to glow when viewed under ultraviolet light. Use of fluorescent antibodies is one technique for rapid identification of certain microorganisms. It is recent technique still in the process of perfection for routine use. (11)(4)

Antibodies stained with a dye which causes them to fluoresce (glow) when viewed under ultraviolet light. Each fluorescent antibody is specific for a particular antigen. Use of fluorescent antibodies is one technique for rapid identification of certain microorganisms. (6)

FMS. Fallout monitoring station. (1)

FOOD CHAIN. A series of organisms each of which feeds on smaller organisms and, in turn, is fed upon by larger organisms. (19)

FOOD VALVE. Device, attached to the bottom of the suction line to a pump; it contains a check valve which permits flow from the tank to the pump but prevents liquid from flowing back into the tank. (2)

FORCE MAIN. Pipeline on the discharge side of a wastewater pumping station, usually to an interceptor or a treatment plant. (2)

FORMATION, WATER-BEARING. A term, more or less relative, used to designate a geological formation that contains considerable ground water. It is usually applied to formations from which the ground water may be extracted by pumping, drainage, etc. See Aquifier. (16)

A relative term used to designate a formation that contains considerable gravity ground water. Usually applied to formations from which ground water may be extracted by pumping, drainage and the like. (17)

FOSDIC. Film optical sensing device for input to computers. (1)

FRACTIONATION. Any one of several processes, apart from radioactive decay, which results in change in the composition of the radioactive weapon debris. As a result of fractionation, the delayed fallout generally contains relatively more of strontium-90 and cesium-137, which have gaseous precursors, than does the early fallout from a surface burst. (20)

FRC. Federal Regional Center (OCD). (1)

FREE AIR OVERPRESSURE (OR FREE FIELD OVERPRESSURE). The unreflected pressure, in excess of the ambient atmospheric pressure, created in the air by the blast wave from an explosion. (20)

FREE ENERGY. That portion of metabolizable energy which is available for the growth and maintenance of an organism. (19)

FRICTION HEAD. That head lost by water flowing in a piping system because of disturbances set up between the moving water and the wall of the piping system. (2)

FRICTION, HYDRAULIC. The resistance to flow exerted on the perimeter or contact surface of a body of water moving in a stream or conduit, due to the roughness characteristic of the confining surface, which induces turbulence and consequent loss of energy. Energy losses arising from excessive turbulence, impact at obstructions, curves, eddies, and pronounced channel changes are not ordinarily ascribed to hydraulic friction. (16)

FRICTION LOSS. Pressure lost in overcoming friction of pipe material on flowing water. (17)

FSA. Fallout shelter analyst/analysis. (1)

FTS. Federal Telecommunications System. (1)

FUNCTION. An area of responsibility whose discharge is required in order to meet program objectives. (9)

FUNCTION, ADMINISTRATIVE. That function which involves the planning, evaluation, advice, facilitation, and coordination of health effort. They modify and control the operating functions. (9)

FUNCTION, OPERATING. That function which contributes directly toward the achievement of the objective. (9)

FUNGI. A group of plants including the molds, mildews, rusts, smuts, and mushrooms; they do not contain chlorophyl and reproduce mainly by sporulation. (6)

Small nonchlorophyl-bearing plants which lack roots, stems, or leaves and which occur (among other places) in water, sewage, or sewage effluents, growing best in the absence of light. Their decomposition after death may cause disagreeable tastes and odors in water; in some sewage treatment processes they are helpful and in others they are detrimental. (16)

FUSION. The process whereby the nuclei of light elements, especially certain isotopes of hydrogen, namely, deuterium and tritium, combine to form the nucleus of a heavier element with the release of substantial amounts of energy. See Termonuclear. (20)(11)(3)(8)

The process whereby the nuclei of two light elements combine to form the nucleus of a heavier element with the release of substantial amounts of energy. It occurs most readily with hydrogen and its isotopes, and it provides the energy for the hydrogen or thermonuclear bomb. (15)

G

GAGE. (1) A device for indicating the magnitude or position of a thing in specific units, when such magnitude or position undergoes change, for example: The elevation of a water surface, the velocity of flowing water, the pressure of water, the amount or intensity of precipitation, the depth of snowfall, etc. (2) The act or operation of registering or measuring the magnitude or position of a thing when these characteristics are undergoing change. (3) The operation, including both field and office work of measuring the discharge of a stream of water in a waterway. (16)

Measuring device which indicates pressure or water levels. (17)

Loss of Head: A gage on a rapid sand filter, which indicates the loss of head involved in the filtering operation whereby the operator is able to ascertain the need for filter washing. (16)

Recording: A gage which makes a continuous graphical or tabular record of whatever it measures. Also called a Register. (17)(16)

Pressure: A device for registering the pressure of solids, liquids, or gases. It may be graduated to register pressure in any units desired. (16) (17)

Water-Level: A gage, recording or otherwise, which indicates the water level in a reservoir, still well, or other receptacle. (16) (17)

GAGING. Measuring velocity and cross-sectional area of a stream of water in a stream channel or open conduit to determine the discharge. (17)

GAGING, STREAM. The operation of measuring the velocity of a stream of water in a channel, or an open conduit, and the area of cross section of the water, for the purpose of determining the discharge. (16)

GALLERY. (1) An underground structure designed and installed for the purpose of collecting subsurface water. (2) A passageway in a structure, such as a dam, water treatment plant, etc., used for obtaining access to interior parts, or to carry pipes, or to house machinery. (16)

GALLONS PER DAY. Rate of flow expressed in period of 24 hours, or total water used per daily period. (10)

GALLONS PER MINUTE. The rate of flow expressed in period of one minute or volume per minute. (10)

GAMMA RADIATION. Same as X-ray except that it originates from the nucleus of the atom whereas X-ray originates from the orbit of the atom. This radiation is the most abundant and the most penetrating. Energy is variable, but in general it can penetrate even through lead. (18)

GAMMA RAY. A penetrating radiation of high energy emitted by a radioactive nucleus. It is of the same nature as X-rays, though generally more energetic. Gamma rays can penetrate considerable thicknesses of matter. (15)

GAMMA RAY (γ). High frequency (short wave length) electromagnetic radiation emitted by the nucleus of an atom. (3)

GAMMA RAYS. Penetrating electromagnetic radiations originating from atomic nuclei. Gamma rays are similar to light rays and X-rays but have shorter wave lengths and higher quantities of energy. They are much more penetrating than alpha particles or beta particles, have longer ranges, and constitute the most dangerous type of radiation hazard. (8)

Same as X-rays except originate from within an atomic nucleus. (14)

GAMMA RAYS (OR RADIATION). Electromagnetic radiations of high energy originating in atomic nuclei and accompanying many nuclear reactions, e.g., fission, radioactivity, and neutron capture. Physically, gamma rays are identical with X-rays of high energy, the only essential difference being that the X-rays do not originate from atomic nuclei, but are produced in other ways, e.g., by slowing down (fast) electrons of high energy. See Electromagnetic Radiation, X-rays. (20)

GARBAGE. All animal and vegetable refuse from kitchens that result from the preparation of food or drink. (19)

GATE. A moveable watertight barrier for the control of a liquid in a waterway. (16)

GEIGER-MUELLER (G-M) TUBE. A gas-filled tube operated with a high voltage such that a discharge is triggered by single ionizing event. Used in instruments measuring low levels of radiation. (3)

GEIGER-MULLER COUNTER (GM COUNTER). An extremely sensitive instrument for the detection and measurement of radiation (X-rays, gamma rays and beta rays). Detects natural background. (14)

GENERAL ACTIVITY AREAS. These include: 1. Direct Operations, 2. Research, 3. Facilities, and 4. Training. (13)

GENETIC EFFECT. The effect (of nuclear radiation, in particular) of producing changes (mutations) in the hereditary components (genes) in the germ cells present in the reproductive organs (gonads). A mutant gene causes changes in the next generation which may or may not be apparent. (20)

GEOMETRY SHIELDING. Shielding provided by distance from source of radiation. (1)(15)

GEOREF. World Geographic Reference System. (1)

GM COUNTER (GEIGER-MULLER). An extremely sensitive instrument for detection of very small amounts of radiation. Detects natural background. (18)

GMT. Greenwich Mean Time. (1)

GOAL. A goal is the planned accomplishment of a program expressed in general qualitative and/or quantitative terms of performance and results of the work operations to be accomplished over a long-range period of time, usually exceeding a fiscal year. (9)

A statement of what will have occurred when a need has been met; e.g., all people have equal access to quality health care. It does not formulate a specific set of activities nor a time table for accomplishment but provides the rationale and direction for all program effort, and the framework for evaluating accomplishment. (13)

GPD, GPH, GPM. Abbreviations for gallons per day, gallons per hour, gallons per minute; rates of fluid flow. (2)

GRADE. Elevation of the invert of the bottom of a pipe line or sewer. (2)

GRADE HYDRAULIC. In a closed conduit under pressure, or an artesian aquifier, or ground-water basin, a line joining the elevations to which water would rise in pipes freely vented and under atmospheric pressure. (17)(16)

GRANULOCYTE. Any cell containing granules, especially a leukocyte (white blood cell) containing neutrophilic, basophilic, or eosinophilic granules in its cytoplasm. (3)

GREENWICH MEAN TIME (GMT) OR (Z). The standard reference time used throughout the world based on the time at the Royal Observatory in Greenwich, England. Using the 24-hour system to convert to Greenwich Time:

Add 5 hours to Eastern Standard Time (EST).
Add 6 hours to Central Standard Time (CST).
Add 7 hours to Mountain Standard Time (MST).
Add 8 hours to Pacific Standard Time (PST).

Also called "ZULU" Time for Zero Meridian. (1)

GROSS REQUIREMENTS. An estimate which includes the total quantity of an item or resource without consideration of available assets. (12)

GROUND WATER. Subsurface or underground water occupying the zone of saturation. In a strict sense the term applies only to water below the water table. (16)(17)

GROUND ZERO (GZ). The point on the earth's surface at which, above which, or below which a nuclear detonation has actually occurred or will occur. (3)

The point on the surface of land or water vertically below or above the center of a burst of a nuclear weapon; frequently abbreviated to GZ. For a burst over or under water, the term "surface zero" should preferably be used. (1)(8)(15)(20)

GSA. General Services Administration. (1)

GUIDELINES. Delineated parameters which permit an organizational unit at any echelon to do planning within the overall context of the basic agency mission. (13)

GUN-TYPE WEAPON. A device in which two or more pieces of fissionable material, each less than a critical mass, are brought together very rapidly so as to form a supercritical mass which can explode as the result of a rapidly expanding fission chain. (20)

GUN-TYPE WEAPON (OR GUN-ASSEMBLY WEAPON). A device in which two or more pieces of fissionable material, each in a subcritical state, are brought together very rapidly so as to form a supercritical mass which can explode as the result of a rapidly expanding fission chain reaction. (3)

GZ. Ground zero. (1)

H

HALF-LIFE. The time required for the activity of a given radioactive species to decrease to half of its initial value due to radioactive decay. The half-life is a characteristic property of each radioactive species and is independent of its amount or condition. The biological half-life is the time required for the amount of a specified element which has entered the body (or a particular organ) to be decreased to half of its initial value as a result of natural, biological elimination processes. The effective half-life of a given isotope is the time in which the quantity in the body will decrease to half as a result of both radioactive decay and biological elimination. (15)(11)

The time required for the activity of a given radioactive species to decrease to half of its initial value due to radioactive decay. The half-life is a characteristic property of each radioactive species and is independent of its amount or condition. The effective half-life of a given isotope is the time in which the quantity in the body will decrease to half as a result of both radioactive decay and biological elimination. See Biological Half-Time. (8)(20)(3)

HALF-RESIDENCE TIME. As applied to delayed fallout, it is the time required for the amount of weapon debris deposited in a particular part of the atmosphere, e.g., stratosphere or troposphere, to decrease to half of its initial value. (20)

HALF-VALUE LAYER (HVL). Amount of shielding material necessary to reduce the intensity of radiation by a factor of 2. (11)(3)

HALF-VALUE LAYER THICKNESS. The thickness of a given material which will absorb half the gamma radiation incident upon it. This thickness depends on the nature of the material--it is roughly inversely proportional to its density--and also on the energy of the gamma rays. (11)(20)(8)

Approximate Half-Value Layer Thickness of Materials (Inches)

	Density (lb/cu ft)	Initial Radiation	Residual Radiation
Steel	490.0	1.5	0.7
Concrete	144.0	6.0	2.2
Earth	100.0	7.5	3.3
Water	62.4	13.0	4.8
Wood	34.0	23.0	8.8

HAMMER, WATER. The phenomenon of oscillations in the pressure of water in a closed conduit, flowing full, which results from a too rapid acceleration or retardation of flow. Momentary pressures greatly in excess of the normal static pressure may be produced in a closed conduit from this phenomenon. (16)

HARDENING. Reducing the vulnerability of a structure, device, or system by strengthening its material components or otherwise increasing its physical protection against deliberate, accidental, or natural damage or wear. (11)(4)

HARDNESS. A characteristic of water, chiefly due to the existence therein of the carbonates and sulfates and occasionally the nitrates and chlorides of calcium, iron, and magnesium, which causes "curdling" of the water when soap is used, an increased consumption of soap, the deposition of scale in boilers, injurious effects in some industrial processes, and sometimes objectionable taste in the water. It is commonly computed from the amounts of calcium and magnesium in the water and expressed as equivalent calcium carbonate. (17)(16)

HARDWARE PROGRAM. Federal contributions (matching funds) have been available for certain kinds of civil defense supplies, equipment, and facilities for many years. This is commonly known as the "Hardware Program." (1)

H-BOMB. Hydrogen bomb. (1)

HFC. Height correction factor. (1)

HEAD. Energy per unit weight of liquid at a specified point. A term used to express pressure or elevation of a liquid at a given point, usually expressed in feet or inches. (See: discharge head, elevation head, energy head, friction head, hydraulic head, loss of head, negative head, positive head, pressure head, pumping head, static head, total head, velocity head). (2)

HEAD, FRICTION. The head lost by water flowing in a stream or conduit as the result of the disturbances set up by the contact between the moving water and its containing conduit and by intermolecular friction. In laminar flow the head loss is approximately proportional to the first power of the velocity; in turbulent flow to a higher power, approximately the square of the velocity. While strictly speaking, head loss due to bends, expansions, obstructions, impact, etc., are not included in this term, the usual practice is to include all such head losses under this term. (16)

Loss of: The decrease in head between two points. (16)

Pressure: The head represented by the expression $\underline{p/w}$, where $\underline{p}$ is pressure and $\underline{w}$ is weight. When $\underline{p}$ is in pounds per square foot and $\underline{w}$ is the weight of the liquid per cubic foot, $\underline{h}$ becomes head in feet. (16)

Static: (1) The total head without deduction for velocity head or losses; for example, the difference in elevation of headwater and tail water of a power plant. (2) The vertical distance between the free level of the source of supply, and the level of the free discharge surface. (16)

Static Suction: The vertical distance from the free surface level of the source of supply to the center line of the pump. (16)

Total: The difference in elevation between the surface of water at the source of supply and the elevation of the water at the outlet, plus velocity head and friction head. (16)

Velocity: (1) The vertical distance or height through which a body must fall freely, under the force of gravity, to acquire the velocity which it possesses. It is equal to the square of the velocity divided by twice the acceleration of gravity. (2) The theoretical vertical height through which a liquid body may be raised due to its kinetic energy. It is equal to the square of the velocity divided by twice the acceceration due to gravity. (16)

HEAD OF WATER. Expression referring to height of water in feet above a certain datum plane. (10)

HEALTH EMERGENCY. Any situation which jeopardizes health and requires immediate action to preserve or restore health; it is characterized by urgency, not necessarily by being sudden or unexpected. The term "health emergencies" is used in Sec. 311(c) in addition to the term "disasters"; they are not mutually exclusive and a health emergency may or may not be a disaster as defined and may or may not be covered by a cooperative plan for disasters. Only such health emergencies as meet the additional criteria specified ... are within the authorization to extend temporary assistance under the specific health emergency provision of Sec. 311(c) of the PHS Act. (5)

HEALTH MANPOWER. Physicians, osteopaths, dentists, sanitary engineers, pharmacists, sanitarians, registered nurses, and some twenty other occupations of vital importance to the Nation's manpower. This group is also referred to as the "hard-core" group. In addition, the Nation's health manpower includes the "supporting" group which includes a number of health associated positions of importance to the "hard-core" group. (11)(13)

HEALTH MATERIAL RESOURCES. Supplies, equipment, and facilities required in the conduct of health services programs to prevent the impairment of and to improve and restore the physical and mental health conditions of the civilian population. (12)

HEALTH MOBILIZATION. Efforts directed toward the health and medical preparation of the country to withstand disaster, be it natural or man-made, and the implementation of those plans where it is necessary. This includes both planning and execution. (11)(4)

HEALTH OBJECTIVE. The amount of change anticipated in a health problem as expressed in the health index or any of its component parts in a stated time period; e.g., decrease mortality, outpatient visits and hospitalization, from diseases of the respiratory system from - to - in - years. (13)

HEALTH PROBLEM. A situation or condition involving people which has a current or potential adverse affect on their health. (13)

HEALTH PROBLEM INDEX. How several measurable factors may be combined to achieve a quantitative basis for comparing problems. (13)

HEALTH RESOURCE MANAGEMENT. The planning, organizing, coordinating, and controlling of health and related resources. It includes the development of a system for estimating the availability of resources postattack, estimating the demand by potential users, and for controlling the use of health resources to support essential health survival and recovery activities. (12)

HEALTH RESOURCES. Manpower, material, and facilities required to prevent the impairment of, improve, and restore the physical and mental health conditions of the civilian population. (11)(4)

HEALTH SERVICES. Medical and dental care in all of their specialties and adjunct therapeutic fields; and the planning, provision, and operation of first-aid stations, hospitals, and clinics; preventive health services, including detection, identification, and control of communicable diseases, their vectors, and other public health hazards; inspection and control of purity of food, drugs, and biologicals; food and milk sanitation; public water supplies; sewage and other waste disposal; registration and disposal of the dead; prevention and alleviation of water pollution; vital statistics services; preventive and curative care related to human exposure to radiological, chemical, and biological warfare agents; and rehabilitation and related services for disabled survivors. (11)

HEALTH STATUS. Amount of disease and its consequences in a given population group compared to a standard reference group. (13)

HEIGHT CORRECTION FACTOR (HCF). Measurement of gamma radiation taken aloft during aerial monitoring must be multiplied by the HCF to correct for the effects of height above the surface. (1)

HEIGHT OF BURST. The height above the earth's surface at which a bomb is detonated in the air. The optimum height of burst for a particular target (or area) is that at which it is estimated a weapon of a specified energy yield will produce a certain desired effect over the maximum possible area. (8)(20)

HETERTROPHS. Microorganisms that derive carbon only from organic sources. (19)

HEW. Health, Education, and Welfare. (1)

HFPS. Home Fallout Protection Survey. (1)

H-HOUR. The term used to designate the time at which a nuclear weapon is detonated at a specific location. (8)

HIGH-ALTITUDE BURST. This is defined, somewhat arbitrarily, as a detonation at an altitude over 100,000 feet. Above this level the distribution of the energy of the explosion between blast and thermal radiation changes appreciably with increasing altitude due to changes in the fireball phenomena. (1)(20)

HIGH PRESSURE STORAGE. Also known as high service storage, or if in pressure storage tank is called pneumatic storage. This is the storage which maintains constant pressure on distribution system and which is readily available for use by consumers. (10)

HIGH SERVICE. Pumping of water under high pressure to distribution system. (2)

HOME FALLOUT PROTECTION SURVEY (HFPS). A system developed by OCD through which householders can fill out forms describing the size, shape, and construction of their homes. Following this a computer determines the protection factor against fallout radiation. Also, this Survey has been referred to as EFPH, "Evaluation of Fallout Protection in Homes," RAHS, "Rapid Analysis of Home Shelter," and HBS, "Home Basement Survey." (1)

HOST. Any animal or plant which harbors or nourishes another organism. (6)

HOT. Slang expression indicating presence of high level radioactivity or contamination above permissible levels for unrestricted use or handling. (18)(14)

HOT SPOT. A small area in a contaminated larger area in which the level of radioactive contamination is greater than in its surrounding area. See Contamination, Radiological. (1)

Region in a contaminated area in which the level of radioactive contamination is somewhat greater than in neighboring regions in the area. See Contamination. (20)

HUD. Housing and Urban Development. (1)

HYDRAULIC HEAD. Height of the hydraulic grade line above the center line of a pressure pipe at a given point. (2)

HYDRAULIC RADIUS. The right cross-sectional area of a stream of water divided by the length of that part of its periphery in contact with its containing conduit; the ratio of area to wetted perimeter. (17)

HYDRAULICS. That branch of engineering science dealing primarily with the application of fluid mechanics to the flow of water. (17)

HYDROGEN BOMB (OR WEAPON). A term sometimes applied to nuclear weapons in which part of the explosive energy is obtained from nuclear fusion (or thermonuclear) reactions. See Fusion, Nuclear Weapon, Thermonuclear. (20)

HYDROLOGY. The applied science concerned with the waters of the earth, their occurences, distribution, and circulation through the unending hydrologic cycle of: Precipitation, consequent runoff, infiltration, and storage; eventual evaporation; and reprecipitation. It is concerned with the physical and chemical relation of water with the rest of the earth and its relation to the life of the earth. (17)(16)

HYDROLYSIS. A chemical reaction in which a compound reacts with the ions of water (H+ and OH-) to form a weak acid, a weak base, or both. (19)

HYDROPHILIC. A term applied to those colloids with a high affinity for water. (19)

HYDROPHOBIC. A term applied to those colloids with a low affinity for water. (19)

HYPOCENTER. A term sometimes used for ground zero. See Ground Zero. (20)

HYPOCHLORINATOR. A mechanical device for the incorporation of a hypochlorite solution into water or sewage for bactericidal purposes. It may also be used to feed other sanitary chemicals such as iodine, alum, soda ash and copper sulfate. (11)

I

ICBM. Intercontinental ballistic missile. (1)

ICC. Interstate Commerce Commission. (1)

ICDM. Industrial Civil Defense Management. (1)

ICRA. Interagency Committee on Radiological Assistance. (1)

ICS. Interagency Communications System. (1)

IDENTIFICATION. Identifying the particular BW agent present after it had been detected. (6)

Identifying the particular CW agent present after it had been detected. (7)

IG. Instructor guide. (1)

IMIS. Integrated Management Information System. (1)

IMMUNITY. Ability of living individuals to resist or overcome infections. (6)

IMMUNIZATION. The process of conferring immunity on an individual. (6)

IMMUNOGENS. A proprietary bacterial antigen said to be free from bacterial cells and toxin, and containing only exotoxins (a toxin excreted by an organism into the surrounding medium). (6)

IMPELLER. A rotating set of vanes designed to impel rotation of a mass of fluid. The head produced and the working pressure of a pump depend on the peripheral speed of the vane tips. (2)

IMPERMEABILITY. The property of rock or earth which prevents perceptible movement of water through it under pressures ordinarily encountered in subsurface water. Even though the material allows capillary movement, it still may be impermeable. (11)

IMPERVIOUS. A term applied to a material through which water cannot pass. It is also applied to material through which water passes with great difficulty. (16)(17)

IMPLEMENTATION. Is the operational phase wherein a program is put into effect through prescribed activities under appropriate administrative supervision, control and support. (21)

IMPLOSION-TYPE WEAPON (IMPLOSION WEAPON). A device in which a quantity of fissionable material, in a subcritical state, has its volume suddenly decreased by compression so that it becomes supercritical and explodes. The compression is achieved by means of a spherical arrangement of specially fabricated shapes of ordinary high explosive which produce an inwardly directed implosion wave. The fissionable material, being at the center of the sphere, is thereby compressed to a supercritical state. See Supercritical. (3)(20)

IMPULSE (PER UNIT AREA). The product of the overpressure (or dynamic pressure) from the blast wave of an explosion and the time during which it acts at a given point. More specifically, it is the integral, with respect to time, of the overpressure (or dynamic pressure), the integration being between the time of arrival of the blast wave and that at which the overpressure (or dynamic pressure) returns to zero at the given point. (20)

INCAPACITATING. Rendering an individual incapable of performing his usual duties or functions, as distinguished from lethal. (6)(7)

INCREASED READINESS INFORMATION SYSTEM (IRIS). A standardized, formated method of reporting increased readiness actions taken by State and local governments in accordance with FCDG, part G, chapter 5. (1)

INDES, LANGELIER. An expression to indicate the hydrogen--ion concentration that a water should have to be in equilibrium with its content of calcium carbonate. (16)

INDIGENOUS. Native. (19)

INDIRECT ITEMS. Includes operational level miscellaneous supervision, supplies, materials, and indirect labor which cannot be specifically identified with an operational project and which are excluded from Supervision and Management Support as defined in this Chapter. (9)

INDUCED RADIOACTIVITY. Radioactivity produced in certain materials as a result of nuclear reactions, particularly the capture of neutrons, which is accompanied by the formation of unstable (radioactive) nuclei. The activity induced by neutrons from a nuclear explosion in materials containing the elements sodium, manganese, silicon, aluminum, or uranium may be significant in some cases. (15)(3)(11)(20)

INDUSTRIAL. Manufacturing plants, processing plants, etc. (10)

INDUSTRIAL-CIVIL DEFENSE. Measures taken to insure that industrial and commercial enterprises make appropriate preparations and plans for protecting life and property in a civil defense emergency. (1)

INDUSTRIAL MUTUAL AID ASSOCIATION. An industrial mutual aid association for civil defense is a cooperative organization of industrial firms, business firms, and similar organizations within an industrial community united by voluntary agreement to assist each other by providing materials, equipment, and personnel needed to insure effective industrial disaster control in wartime or peacetime emergency. (1)

INDUSTRY ADVISORY COMMITTEE. One of the advisory committees to the Federal Communications Commission. Each committee is composed of representatives of the broadcasting industry at national (NIAC), regional (RIAC), State (SIAC), or local operational area (OAIAC) levels. These committees assist the Federal Communications Commission in the execution of its responsibilities pursuant to the Executive Order that directs the creation of the Emergency Broadcast System. (1)

INFECTIOUS DISEASE. One which is caused by a living agent, such as bacteria, protozoa, viruses, or fungi; may or may not be contagious. (6)

INFILTRATION. (1) The flow or movement of water through the interstices or pores of a soil or other porous medium. (2) The absorption of liquid water by the soil, either as it falls as precipitation, or from a stream flowing over the surface. See Seepage. (16)(17)

INFLUENCE, CONE OF. The depression, roughly conical in shape, produced in a water table, or other piezometric surface, by the extraction of water from a well at a given rate. The volume of the cone will vary with the rate of withdrawal of water. Also called Cone of Depression. (16)

INFLUENT. Water, or other liquid, raw or partly treated, flowing into a reservoir, basin, or treatment plant, or part thereof. (17)

INFORMATION (INTELLIGENCE). The materials of every description which are used in the production of intelligence. It includes facts, observations, reports, rumors, photographs, documents, etc. (1)

INFRARED. Electromagnetic radiations of wavelength between the longest visible red (7,000 Angstroms or 7×10^{-4} millimeter) and about 1 millimeter. See Electromagnetic Radiation. (20)

INFRA-RED RAYS. Heat rays, or electromagnetic radiation with wave lengths that are longer than those of the red end of the visible spectrum but less than those of radio waves. Infra-red rays carry off most of the heat developed by a nuclear bomb and are the major cause of thermal radiation damage. (8)

INTERMEDIATE PRODUCT. The output of an organization or system identifiable and expressible in measurable terms, and serving as input to a higher intermediate product or end product. (9)

INITIAL NUCLEAR RADIATION. Nuclear radiation (essentially neutrons and gamma rays) emitted from the fireball and the cloud column during the first minute after a nuclear (or atomic) explosion. The time limit of one minute is set, somewhat arbitrarily, as that required for the source of part of the radiations (fission products, etc., in the radioactive cloud) to attain such a height that only insignificant amounts reach the earth's surface. See Residual Nuclear Radiation. (8)(20)(11)(1)

IN-LINE CENTRIFUGAL PUMP. Pump mounted directly in a pipe line; if motor also is inside the pipe it is a submerged motor in-line pump. (2)

INOCULATION. To introduce a microorganism, vaccine, immunizing serum, or other antigenic substance for preventive, curative, or experimental purposes. (6)

INSTANTANEOUS FLOW. That flow which occurs during a relatively short period of time. (10)

INTAKE. Structure or portion of pump through which a pump takes suction. (2)

INTEGRATED MANAGEMENT INFORMATION SYSTEM (IMIS). A computer-based system to assist OCD Regions and the States in program management. The system is based on data from Program Papers, computer tapes on the National Fallout Shelter Survey, local Emergency Operating Centers, and will include data from community shelter plans. (1)

INTEGRATED NEUTRON FLUX. The product of neutron flux and time, expressed in units of neutrons per square centimeter. It is a measure of neutron exposure dose. See Dose, Neutron Flux. (20)

INTELLIGENCE. The product resulting from the collection, evaluation, analysis, integration, and interpretation of all available information which concerns one or more areas of operations and which is immediately or potentially significant to planning. (1)

INTENSITY. The energy (of any radiation) incident upon (or flowing through) unit area, perpendicular to the radiation beam, in unit time. The intensity of thermal radiation is generally expressed in calories per square centimeter per second falling on a given surface at any specified instant. As applied to nuclear radiation, the term intensity is sometimes used, rather loosely, to express the exposure dose rate at a given location, e.g., in roentgens (or milliroentgens) per hour. (20)

INTERAGENCY COMMUNICATIONS SYSTEM (ICS). This system provides communications to various Federal agency national headquarters relocation sites. (1)

INTERAGENCY RADIOLOGICAL ASSISTANCE PLAN (IRAP). A plan developed by the Interagency Committee on Radiological Assistance as a means for providing rapid and effective radiological assistance in the event of a radiological incident. (1)

INTERFERENCE, WELL. The phenomena occurring when the water surfaces of the cones of depression of two or more wells come in contact with one another, thereby decreasing the yield of the wells. It is expressed quantitatively as the percentage reduction in yield of each well in terms of the capacity or yield uninfluenced by the others. It is commonly expressed as the decline in water level in feet in one well caused by pumping another well. (16)(17)

INTERNAL RADIATION. Nuclear radiation (alpha and beta particles and gamma radiation) resulting from radioactive substances in the body. Important sources are iodine^{131} in the thyroid gland, and strontium^{90} and plutonium^{239} in the bone. (11)(1)(20)

INTERNAL SOURCES OF RADIATION. The radioactive material taken into the body. (15)

INTERSTICE. A pore or open space in rock or granular material not occupied by solid mineral matter. Also called Void or Void Space. (17)(16)

INVERSE SQUARE LAW. The law which states that when radiation (thermal or nuclear) from a point source is emitted uniformly in all directions, the amount received per unit area at any given distance from the source, assuming no absorption, is inversely proportional to the square of that distance. (20)

ION. An atom or molecule that has lost or gained one or more electrons by ionization; it becomes electrically charged. (3)

An electrically charged atom (or group of atoms) formed when an ordinarily neutral atom (or group of atoms) gains or loses an electron (or electrons). (8)

ION PAIR. See Ionization. (20)

IONIC ACTIVITY. The apparent concentration of ions in a solution. (19)

IONIC STRENGTH. A term reflecting the extent of the interaction of ions on one another in a solution. (19)

IONIZATION. A process by which a neutral atom becomes electrically charged--positive ion if it loses one or more extranuclear electrons, or negative ion if it gains one or more. (8)

The process whereby energy is acquired by a neutral atom or molecule resulting in the ejection of an orbital electron and producing two charged particles, i.e., an ion pair. (3)

The separation of a normally electrically neutrao atom or molecule into electrically charged components. The term is also employed to describe the degree or extent to which this separation occurs. In the sense used in this book, ionization refers especially to the removal of an electron (negative charge) from the atom or molecule, either directly or indirectly, leaving a positively charged ion. The separated electron and ion are referred to as an ion pair. See Ionizing Radiation. (20)

IONIZATION (ION) CHAMBER. An instrument that detects and measures ionizing radiation by observing the electrical current created when radiation ionizes gas in the chamber, making it a conductor of electricity. (3)

IONIZATION CONSTANT. A value relating the equilibrium activities or concentrations of the dissociated and undissociated forms of an ionizable compound in solution at a given temperature. (19)

IONIZING RADIATION. Electromagnetic radiation (gamma rays or X-rays) or particulate radiation (alpha particles, beta particles, neutrons, etc.) capable of producing ions, i.e., electrically charged particles, directly or indirectly in its passage through matter. (11)(20)(15)

Electromagnetic radiation X or γ photons) or corpuscular radiation (α particles, β particles, negatrons, positrons, protons, neutrons, and heavy particles) capable of producing ions by direct or indirect processes. (3)

IONOSPHERE. The region of the atmosphere, extending from roughly 40 to 250 miles altitude, in which there is appreciable ionization. The presence of charged particles in this region profoundly affects the propagation of long-wavelength electromagnetic radiations (radio and radar waves. (20)

IP. Industrial Participation. (1)

IRAP. Interagency Radiological Assistance Plan. (1)

IRBM. Intermediate range ballistic missile. (1)

IRIS. Increased Readiness Information System. (1)

IRRIGATION. Artificial application of water to lands for agricultural purposes. (17)

ISOTOPES. Atoms of the same element having identical chemical properties, but differing in their atomic masses (due to different numbers of neutrons in their respective nuclei). (3)

Forms of the same element having identical chemical properties but differing in their atomic masses (due to different numbers of neutrons in their respective nuclei) and in their nuclear properties, e.g., radioactivity, fission, etc. For example, hydrogen has three isotopes, with masses of 1 (hydrogen), 2 (deuterium), and 3 (tritium) units, respectively. The first two of these are stable (nonradioactive), but the third (tritium) is a radioactive isotope. Both of the common isotopes of uranium, with masses of 235 and 238 units, respectively, are radioactive; emitting alpha particles, but their half-lives are different. Furthermore, uranium-235 is fissionable by neutrons of all energies, but uranium-238 will undergo fission only with neutrons of high energy. See Nucleus. (20)

J

JCDSG. Joint Civil Defense Support Group. (1)

JCEPC. Joint United States/Canada Civil Emergency Planning Committee. (7)

JCS. Joint Chiefs of Staff.

JETTING. (1) A method of well sinking wherein the casing is sunk by driving while the material inside is washed out by a water jet, and carried to the top of the casing. (2) A method of sinking piles by means of a water jet. (3) A method of inserting well points by means of a water jet. (16)

JOINT CIVIL DEFENSE SUPPORT GROUP (JCDSG). A special group located in the Office of the Chief of Engineers which directs the effort of Corps of Engineers and Naval Facilities Engineering Command in connection with the National Fallout Shelter Survey and related activities. (1)

JOINT REGIONAL CONTINUING COMMITTEE (JRCC). United States/Canada Joint Regional Continuing Committee is responsible for identifying cross-border emergency planning problems and making recommendations for their solution to the JCEPC. (1)

JOINT UNITED STATES/CANADA CIVIL EMERGENCY PLANNING COMMITTEE (JCEPC). This committee is charged with responsibility for making recommendations to the two governments concerning plans for mutual assistance between the civil authorities of the two countries in the event of an attack on either country. (1)

JRCC. Joint Regional Continuing Committee. (7)

K

KILO-ELECTRON VOLT (OR KEV). An amount of energy equal to 1,000 electron volts. See Electron Volt. (20)

KILOTON. A measure of weight equal to 1,000 tons. See TNT Equivalent. (8)

KILOTON (KT). A unit of energy of a nuclear explosion which is equivalent to that produced by the explosion of 1 kiloton (1,000 tons) of TNT, i.e., 10^{12} calories or 4.2×10^{19} ergs. (15)

Refers to the energy release in the explosion of 1,000 tons of TNT where 1 ton equals 2,000 pounds. (3)

KILOTON ENERGY. The energy of a nuclear (or atomic) explosion which is equivalent to that produced by the explosion of 1 kiloton (i.e., 1,000 tons) of TNT, i.e., 10^{12} calories or 4.2 x 10^{19} ergs. See Megaton Energy, TNT Equivalent. (20)

KILOTON WEAPONS. A general term applying to nuclear weapons having an energy release equivalent to that produced by the explosion of from 1,000 tons to 1,000,000 tons of TNT. (8)(11)(12)

KT. Kiloton. (3)

L

LAP. Lattice Assessment Program. (1)

LATERAL. A secondary conduit, diverting liquid from or furnishing liquid to a main conduit. (16)

LATERALS. Branching water mains. (17)

LATTICE ASSESSMENT PROGRAM (LAP). A system used in damage assessment utilizing preplots of resources on maps or charts and using the UTM coordinate system. It involves the preparation of a lattice for each Standard Metropolitan Statistical Area (SMSA). (1)

LD/50, OR LD-50, or LD_{50}. Lethal dose to 50 percent--median lethal dose. (1)

LETHAL DOSE. The amount of ionizing radiation exposure required to cause death. A brief (within 4 days) whole body gamma exposure of 600 roentgens would be a lethal dose for most people. (1)

LEUCOCYTE. A white or colorless corpuscle; an ameboid cell which is found in the blood, lymph, and body tissues and which forms the chief cellular element in pus. One of the body defenses in overcoming infection. (6)

LEVEL, HYDROSTATIC. The level or elevation to which the top of a column of water would rise, if afforded opportunity to do so, from an artesian aquifer, or basin, or from a conduit under pressure. (16)

LEVEL OF MEDICAL CARE. The degree or the prescribed limits of medical treatment and care that will be given certain specified conditions. (11)(14)

LEVEL, PUMPING. Elevation at which water stands in a well when the well is being pumped at a given rate. (17)

LEVEL, STATIC. Elevation of the water table or pressure surface when it is not influenced by extraction of water from the groundwater body. (17)

LIAC. Local Industry Advisory Committee. (1)

LIFT-STATION. Small pumping station used to lift wastewater from one level (sewer of sump) to a higher level, usually an intercepting sewer. (2)

LIGHT DAMAGE. See Damage Classification. (1)

LIMITING NUTRIENT. That nutrient of which the concentration in the substrate limits the growth of the organism utilizing the substrate. (19)

LINE LOAD CONTROL. A method provided by some telephone companies for controlling heavy telephone usage in emergencies to better insure the capability of essential telephone communications. (1)

LINE OF SATURATION. A line through the cross section of an earth dam marking the uppermost limit of flow of water through the dam and subsoil. Material below the line of saturation will be saturated with water. (17)

LINEAR ABSORPTION COEFFICIENT. See Absorption Coefficient. (20)

LIP HEIGHT. The height above the original surface to which earth is piled around the crater formed by an explosion. See Crater. (20)

LOAD FACTOR. Ratio of average load carried by any operation to the maximum load carried during a given period of time, expressed as a percentage; e.g., water or power demand. (2)

LOADING. The force on an object or structure or element of a structure. The loading due to blast is equal to the net pressure in excess of the ambient value multiplied by the area of the loaded object, etc. See Diffracting Loading, Drag Loading. (20)

LOG, OPERATING. Daily detailed records of operation. (17)

LOG, WELL. A chronological record of the soil and rock formations which were encountered in the operation of sinking a well, with either their thickness, or the elevation of the top and bottom of each formation given. It also usually includes statement as to the lithologic composition and water-bearing characteristics of each formation. (17)

LOSS OF HEAD. Decrease of head (pressure) between two points on a system in which fluid is flowing. Loss of head may be caused by eddies, enlargements, entrance conditions, exit conditions, friction. (2)

LOW PRESSURE STORAGE. Often called clear water storage. This storage is under atmospheric pressure, that is, it exerts no pressure head upon the distribution system. By means of a high service pump, this storage is readily accessible to the distribution system. (11)

LOW SERVICE. Pumping of water from source of supply to treatment processes, or from clear well to filter washing system. (2)

LUBRICATION. The provision of oil, grease, or water at points of contact between a moving and a stationary surface, or between two moving surfaces to reduce friction and heat and to prevent sticking of one surface to the other. (2)

LUBRICATOR. Device that feeds oil or grease to a moving surface, either automatically or by manual adjustment. (2)

LYMPHOCYTE. A variety of white corpuscle (blood cell) which arises in the reticular tissue of the lymph glands and in other tissue. The nucleus is single and large and is surrounded by protoplasm which is generally described as nongranular. (3)

LYOPHILIZATION. The process of drying from the frozen state under vacuum. (6)

M

MACH FRONT. See Mach Stem. (20)

MACH REGION. The region on the surface at which the Mach stem has formed as the result of a particular explosion in the air. (20)

MACH STEM. The shock front formed by the fusion of the incident and reflected shock fronts from an explosion. The term is generally used with reference to a blast wave, propagated in the air, reflected at the surface of the earth. The Mach stem is nearly perpendicular to the reflecting surface and presents a slightly convex (forward) front. The Mach stem is also called the Mach front. See Shock Front, Shock Wave. (20)

MAIN FORCE. A pipe line on the discharge side of a water or sewage pumping station. (16)

MAINS. Pipes in the water distribution system which are usually located in streets. (17)

MAINTENANCE. Includes the function of corrective and preventive maintenance necessary to keep equipment in proper operating condition. (Operator maintenance is not included.) Maintenance may be performed at central overhaul facilities, regional shops or at local installations. (9)

Work performed for the purpose of maintaining pumps and pumping equipment in good operating condition and to repair minor and major faults or breakdowns. (2)

MAJOR DISASTER. (As used herein and defined by the Federal Disaster Act (P.L. 81-875) the Disaster Relief Act of 1966 (P.L. 89-769) and related regulations) is [any flood, drought, fire, hurricane, earthquake, storm, or other] a catastrophe as determined by the President in accordance with legislative authority distinct from, altho related to, the authority of Sec. 311(c) of the PHS Act. A "disaster" may or may not be or become a "major disaster" as defined. (5)

Public Law 875, 81st Congress, as amended, provides that any flood, draught, fire, hurricane, earthquake, storm, or other catastrophe in any part of the United States which, in the determination of the President, is or threatens to be of sufficient severity and magnitude to warrant disaster assistance by the Federal Government to supplement the efforts and available resources of State and local governments in alleviating the damage, hardship, or suffering caused thereby. (1)

MANAGEMENT INFORMATION SYSTEM (MIS). A communications process in which data is acquired, recorded, and processed for operational purposes. The problems are isolated for higher level decision making, and information is fed back to top management to reflect the progress or lack of progress made in achieving major objectives. (1)

MANOMETER. An instrument for measuring pressure: usually it consists of a shaped tube containing a liquid, the surface of which in one end of the tube moves proportionally with changes in pressure upon the liquid in the other end. The term is also applied to a tube type differential pressure gage. (17)(16)

MANUAL CONTROL. Device or system for starting, stopping or controlling pump operation by an operator. (2)

MAN-YEAR. A man-year equals the number of regular compensable hours in one year. Eight hours x 260 compensable days = 2080 hours, or one man-year of work. The average off-duty time is 15% or 312 man-hours, leaving 1768 hours of on-duty time per man-year. (9)

MASS. The material equivalent of energy--different from weight in that it neither increases nor decreases with gravitational force. (3)

MASS ABSORPTION COEFFICIENT. See Absorption Coefficient. (20)

MASS NUMBER. See Nucleus. (20)

MASS NUMBER (A). The number of nucleons (neutrons and protons) in the nucleus of an atom. (3)

MATCHING FUNDS. See Contributions. (1)

MATRIX. An array of items which provides a means for classification of a financial or non-financial variable in terms of program categories and activities. (13)

MAXIMUM PERMISSIBLE EXPOSURE (OR MPE). The total amount of radiation exposure which it is believed a normal person may receive day-by-day without any harmful effects becoming evident during his lifetime. (11)

MECHANICAL EFFICIENCY. Liquid horsepower expressed as a percentage of the brake horsepower. Liquid horsepower is the rate of useful work done on the liquid, or the volumetric liquid flow rate times the pressure difference across the pump, divided by an appropriate conversion factor, or

$$\text{Liquid hp} = \text{gpm} \times \frac{\text{psi}}{1714.} \quad (2)$$

MEDIAN LETHAL DOSE. The amount of ionizing (or nuclear) radiation exposure over the whole body which it is expected would be fatal to 50 percent of a large group of living creatures or organisms. It is commonly (although not universally) accepted, at the present time, that a dose of about 450 roentgens, received over the whole body in the course of a few hours or less, is the median lethal dose for human beings. (11) (8) (14)

MEDICAL SELF AID. Self or neighbor medical help necessitated by a national disaster. This includes measures to alleviate suffering and sustain life until casualties can obtain the assistance of a physician. It includes not only injuries caused as a result of attack, but also environmental protection in a primitive existence. (11)(4)

MEDICAL SELF-HELP (MSH). A program designed to provide information and training to people that will help them prepare for survival in time of disaster when professional medical services may not be available. (1)

MEDICAL STOCKPILE. Medical survival items and essential support items stored and maintained by the Federal government at strategically located warehouses within the United States as bulk supplies or as functional units such as 200-bed emergency hospitals, in prepositioned locations. (11)(4)

MEDICAL SURVIVAL ITEMS. Those items considered absolutely essential for post-attack medical care for national survival. (11)(4)

MEGACURIE. One million curies. See Curie. (20)

MEGATON. The unit of energy of a nuclear explosion which is equivalent to 1,000,000 tons (or 1,000 kilotons) of TNT. (15)

A measure of weight equal to 1,000,000 tons. See TNT Equivalent. (8)

MEGATON (MT). Refers to the energy release in the explosion of a million tons of TNT. (3)

MEGATON ENERGY. The energy of a nuclear (or atomic) explosion which is equivalent to 1,000,000 tons (or 1,000 kilotons) of TNT, i.e., 10^{15} calories or 4.2×10^{22} ergs. See TNT Equivalent. (20) (1)

MEGATON WEAPON. A nuclear weapon having an energy release equivalent to that produced by the explosion of a million or more tons of TNT. (11)(4)

A general term applying to nuclear weapons having an energy release equivalent to 1,000,000 tons or more of TNT. (8)

MESOPHILIC. A term applied to those organisms that grow best at temperatures ranging from 10 to 40°C. (19)

Endogenous Respiration: An auto-oxidation of cellular material that takes place in the absence of assimilable organic material to furnish the energy required for the replacement of worn-out components of protoplasm. (19)

Enthalpy: Metabolizable energy. (19)

Entropy: That portion of metabolizable energy which is unavailable for the growth and maintenance of an organism. (19)

Escherichia Coli: A species of bacteria found in large numbers in the intestinal tract of warm blooded animals. (19)

Exothermic: Heat liberating. (19)

Facultative Autotrophs: Microorganisms that can use both carbon dioxide and organic compounds as carbon sources. (19)

Facultative Bacteria: Bacteria having the ability to live and grow both in the presence of and in the absence of free oxygen. (19)

Flora: Plant life. (19)

Food Chain: A series of organisms each of which feeds on smaller organisms and, in turn, is fed upon by larger organisms. (19)

Free Energy: That portion of metabolizable energy which is available for the growth and maintenance of an organism. (19)

Garbage: All animal and vegetable refuse from kitchens that result from the preparation of food or drink. (19)

Hetertrophs: Microorganisms that derive carbon only from organic sources. (19)

Hydrolysis: A chemical reaction in which a compound reacts with the ions of water ($H+$ and $OH-$) to form a weak acid, a weak base, or both. (19)

Hydrophilic: A term applied to those colloids with a high affinity for water. (19)

Hydrophobic: A term applied to those colloids with a low affinity for water. (19)

Indigenous: Native. (19)

Ionic Activity: The apparent concentration of ions in a solution. (19)

Ionic Strength: A term reflecting the extent of the interaction of ions on one another in a solution. (19)

Ionization Constant: A value relating the equilibrium activities or concentrations of the dissociated and undissociated forms of an ionizable compound in solution at a given temperature. (19)

METABOLISM. The chemical and physical processes continuously taking place in living organisms and cells, comprising those processes by which assimilated nutrient is built up into protoplasm (anabolism), and those by which protoplasm is used and broken down into simpler substances, with the release of energy (catabolism). (19)

METAZOA. Microscopic multicellular animals. (19)

METER. Device for measuring speed or velocity. (16)(17)

Current: A device for determining the velocity of water, flowing in a stream, open channel, or conduit, by ascertaining the speed at which the flowing water rotates a vane or series of cups. (16) (17)

Displacement: A water meter that measures the quantity of flow by recording the number of times a container of known volume is filled and emptied. Displacement meters are used primarily for relatively low flows. (16)

Turbine: A water meter of the velocity type used to measure large and constant flowing volumes of water at a minimum loss of line pressure. (16)

Venturi: A meter for measuring flow of water of other fluid through closed conduits or pipes, consisting of a Venturi tube and one of several proprietary forms of flow registering devices. The device was developed as a measuring device and patented by Clemens Herschel. (16) (17)

MEV (OR MILLION ELECTRON VOLT). A unit of energy commonly used in nuclear physics. It is equivalent to 1.6 x 10^{-6} erg. Approximately 200 Mev of energy are produced for every nucleus that undergoes fission. See Electron Volt. (20)

MICROCURIE. A one-millionth part of a curie. See Curie. (20)

MICRON. A unit of linear measurement used in connection with the size of particles. One micron is equal to 1-1/1000 of a millimeter, or approximately 1/25,000 of an inch. (6)

A one-millionth part of a meter, i.e., 10^{-6} meter or 10^{-4} centimeter; it is roughly four one-hundred-thousands (4 x 10^{-5}) of an inch. (20)

MICROORGANISM. A minute living organism, usually microscopic in size. (6)

Minute organism either plant or animal, invisible or barely visible to the naked eye. (16) (17)

MICROORGANISMS. Microscopic plants and animals such as bacteria, mold, protozoa, algae, and small metazoa. (19)

MILITARY OVERSEAS SHELTER SURVEY (MOSS). A data collection and processing program for surveying military structures outside the continental United States. (6)(1)

MILITARY PHASE I MEDICAL TREATMENT UNIT. Emergency medical packet for casualties occurring among 100 personnel. The packet is intended for use during Phase I, the stage of self help and buddy aid, after disaster. The 320 lb. package contains 26 items useful to care for casualties expected among 100 persons, and has a shelf-life of 5 years. The units are now being distributed to various military posts, camps, and stations wherever 100 or more people are normally assigned. (11)

MILITARY SUPPORT TO CIVIL DEFENSE. Action taken by military authorities to provide emergency assistance to civil authroities as defined in DOD Directive 3025.10. Also included is action taken by civil authorities to support priority requirements of military forces engaged in or directly supporting retaliatory or defense operations. (1)

MILLIGRAM PER LITER. Equivalent to a part per million. (10)

MILLION ELECTRON VOLT. See Mev. (20)

MILLIRAD (MRAD). 1/1000 of a RAD. (14)

MILLIREM. A one-thousandth part of a rem. See Rem. (20)

MILLIROENTGEN. A one-thousandth part of a roentgen. See Roentgen. (20)

MILLISECOND. A one-thousandth part of a second. (20)

MIRROR POINT. A point at which a charged particle, moving (in a spiral path) along the lines of a magnetic field, is reflected back as it enters a stronger magnetic field region. The actual location of the mirror point depends on the direction and energy of motion of the charged particle and the ratio of the magnetic field strengths. As a result, only those particles satisfying the requirements of the existing situation are reflected. (20)

MIS. Management Information System. (1)

MIXED-FLOW PUMP. Centrifugal pump in which discharge head is developed by a combination of centrifugal force and by the lift of the vanes on the liquid, a combination of radial discharge, as in volute pumps, and axial discharge, as in axial-flow pumps. (2)

MIXED LIQUOR. Mixture of activated sludge and liquid waste. (19)

MIXER, FLASH. A device for quickly dispersing chemicals uniformly throughout a liquid. (16)

MMIS. Municipal Management Information. (1)

MODERATE DAMAGE. See Damage Classification. (1)

MOLDS. Multicellular, non-photosynthetic plants. (19)

MOLECULE. A group of atoms held together by chemical forces. The atoms in the molecule may be identical, H_2, or different, H_2O. (3)

The smallest particle of a compound which still retains the physical properties of the substance. (8)

MONITOR. An individual trained to measure, record, and report radiation dose and dose rates; provide limited field guidance on radiation hazards associated with operations to which he is assigned; and perform operator's maintenance of radiological instruments. (5)

MONITORING. The procedure or operation of locating and measuring radioactive contamination by means of survey instruments which can detect and measure, as dose rate, ionizing radiations. (15)(11)

MONITORING (RADIOLOGICAL). Radiological determination of the existence and the intensity of radiation present in a given object or area. (8)

MOS. Military occupational specialty. (1)

MOSS. Military Overseas Shelter Survey. (1)

MOULAGES. Plastic molds, painted or otherwise made up to realistically simulate wounds, to be applied to the body of the "casualty," for use in training in casualty care. (11)

MOVEMENT. The act of moving people to shelter before, during, or immediately after an attack; generally from areas of shelter deficiency or destruction. (1)

MPC. Maximum permissible concentration. (1)

MPE. Maximum permissible exposure. (1)

MPS. Master Project Summary form. (9)

MSPO. Military Support Planning Officer. (1)

MT. Megaton. (1)

MUSTARD GAS. Dark, oily liquid blister gas which injures the eyes and lungs and blisters the skin. Possesses horse radish or garlic odor. Quite persistent. (7)

N

NACOM I. National Civil Defense landline teletype and telephone system connecting the Federal and State Civil Defense Headquarters. (1)

National Communications System (Landline). (1)

NACOM II. The National Civil Defense Radio System which backs up NACOM I. (1)

National Communications System (Radio). (1)

NADWARN. National Disaster Warning System. (1)

NASCDD. National Association of State Civil Defense Directors. (1)

NAS/NRC. National Academy of Sciences/National Research Council. (1)

NATIONAL CIVIL DEFENSE COMPUTER FACILITY (NCDCF). A computer facility located at Olney, Md., operated for the Office of Civil Defense by the U. S. Army Corps of Engineers. (1)

NATIONAL COMMUNICATIONS SYSTEM (NCS). The unified governmental communications system, responsive to a single Executive agent (Secretary of Defense), derived from linking together, improving, and extending the communication facilities and components of the various Federal agencies. (1)

NATIONAL DEFENSE EMERGENCY AUTHORIZATION (NDEA). An authorization issued by FCC permitting a broadcast station to operate during an emergency in accordance with procedures provided in the Emergency Broadcast Plan. (1)

NATIONAL DEFENSE TRANSPORTATION AGENCY (NDTA). An association working with the DOD military and civil defense organization to make transportation support readily available in emergencies. (1)

NATIONAL DISASTER WARNING SYSTEM (NADWARN). A proposed system designed to improve all natural disaster warning procedures and practices on a nationwide basis. (1)

NATIONAL FALLOUT SHELTER SURVEY (NFSS). The analysis of existing large buildings and subsurface enclosures by architects and engineers qualified in fallout shelter analysis to identify protected space suitable for use as public fallout shelter. (1)

NATIONAL INDUSTRIAL EQUIPMENT RESERVE. A government owned reserve pool of machine tools, jigs, dies, and fixtures, stored in a high state of readiness for use by industry in the event of mobilization of the industrial base, in order to reduce lead time for production of essential defense production. (1)

NATIONAL INVENTORY CONTROL POINT. (NICP). National Inventory Control Point for shelter supplies. (1)

NATIONAL LOCATION CODE (NLC). Published in eight volumes, one for each OCD Regional area, the NLC is a directory of standard locations which are used in the National Fallout Shelter Survey, Marking and Stocking Program, Community Shelter Planning, and for other purposes. (20)

NATIONAL MILITARY COMMAND CENTER (NMCC). The Pentagon facility serving as the center of command for the highest level of military authority. (20)

NATIONAL PLAN. Short title for The National Plan for Emergency Preparedness developed by the Office of Emergency Planning, which sets forth the basic principles, policies, responsibilities, preparations, and responses of civil government to meet any kind of national defense emergency. (20)

NATIONAL RESOURCE EVALUATION CENTER (NREC). With support from other Federal agencies, OEP maintains a national resource evaluation capability to support emergency preparedness planning at all levels of government. OEP coordinates Federal activities in support of situation analysis for purposes of continuity of government and for central programming and management of resources. It administers these programs through the NREC. (20)

NATIONAL WARNING CENTER I. The facility staffed by attack warning officers and situated within the combat operations center at NORAD Headquarters. Two alternate National Warning Centers, numbers II and III, are located at Denton, Tex., and Washington, D. C. areas respectively. (20)

NATIONAL WARNING SYSTEM (NAWAS). The Federal portion of the Civil Defense Warning System used to disseminate warnings and other emergency information from the warning centers or regions to warning points in each State. (20)

NATURAL IMMUNITY. A type of immunity with which an individual is born, enabling him to resist infection without first having the disease.

NAVFAC. U. S. Naval Facilities Engineering Command. (1)

NAWAS. National Warning System. (1)

NAWAS EXTENSION. A type of telephone service which extends, without relay, the transmission of warning from the Civil Defense warning point to places having a vital need for this information. (An approvable item under Federal contributions.) (20)

NBC. Nuclear, biological, chemical. (1)

NCDCF. National Civil Defense Computer Facility. (1)

NCS. National Communications System. (1)

NDEA. National Defense Emergency Authorization. (1)

NDER. National Defense Executive Reserve. (1)

NDTA. National Defense Transportation Agency. (1)

NEAR. National Emergency Alarm Repeater System. (1)

NEED. That state or condition in the community which shows a lack of essential public health protection and well-being. (9)

NEGATIVE HEAD. Vertical distance below any point of a selected base line in a closed system through which a less-than-atmospheric pressure of a liquid would cause that fluid to drop in a U-tube open to the atmosphere at one end. That is, negative head is a linear measurement of a partial vacuum in terms of head. (2)

NEGATIVE PHASE. See Shock Wave. (20)

NERVE GAS. An odorless, colorless, tasteless gas which, as a result of its action on the nerve centers, can cause total paralysis and death from suffocation within a few minutes after exposure. (7)

NET POSITIVE SUCTION HEAD (NPSH). Residual energy in excess of the vapor pressure of a liquid as it reaches a pump inlet, measured in feet of liquid. The numberical value representing NPSH expresses the margin of safety of a pump's ability to operate without cavitation. (2)

NET REQUIREMENTS. An estimate which reflects the deficiency in quantity of an item or resource after deducting all available assets under the control of the management level preparing the estimate. (12)

NEUTRON. A neutral particle, i.e., with no electrical charge, of approximately unit mass, present in all atomic nuclei, except those of ordinary (light) hydrogen. Neutrons are required to initiate the fission process, and large numbers of neutrons are produced by both fission and fusion reactions in nuclear (or atomic) explosions. (20)(15)(8)

Elementary nuclear particle with a mass approximately equal to that of a hydrogen atom and electrically neutral. (3)

NEUTRON FLUX. The product of the neutron density (number per cubic centimeter) and the neutron velocity; the flux is expressed as neutrons per square centimeter per second. It is numerically equal to the total number of neutrons passing, in all directions, through a sphere of 1 square centimeter cross sectional area per second. (20)

NEVADA TEST SITE (NTS). An area within the continental United States used for nuclear (or atomic) tests. It is located northwest of Las Vegas, Nevada, within the boundaries of the Las Vegas Bombing and Gunnery Range. (20)

NFSS. National Fallout Shelter Survey. (1)

NIAC. National Industry Advisory Committee. (1)

NICP. National Inventory Control Point. (1)

NIER. National Industrial Equipment Reserve. (1)

NITRIFICATION. A biological process in which ammonia is converted first to nitrite and then to nitrate. (19)

NITROGEN FIXATION. The conversion of gaseous elementary nitrogen into forms of nitrogen available to organisms. (19)

NITROGEN MUSTARDS. Group of blister gases similar to mustard gas in effects and persistency. Little or no odor. (8)

NLC. National Location Code. (1)

NMCC. National Military Command Center. (1)

NOMINAL ATOMIC BOMB. A term, now becoming obsolete, formerly used to describe an atomic weapon with an energy release equivalent to 20 kilotons (i.e., 20,000 tons) of TNT. This was approximately the energy yield of the bombs exploded over Japan and in the Bikini tests of 1946. (20)(8)

NONEFFECTIVE. As applied to an individual, one who cannot perform his assigned mission or task. (3)

NON-ELECTROLYTES. Materials which when placed in solution do not make the solution conductive to electrical currents. (19)

NONGOVERNMENT COMMUNICATIONS FACILITIES (EBS). Those owned or leased, and operated by other than the U. S. Government. "Nongovernment" as used in the Emergency Broadcast System Plan excludes Federal Government but includes State and local government FCC licensees. Federal Government is not licensed by FCC. (20)

NORAD. North American Air Defense Command. (1)

NORMAL DEVELOPMENT. Efforts to insure that an individual develops normally as well as efforts to protect the individual's health or to prevent his illness. Includes such diverse activities as prenatal care, air pollution control, multiphasic screening and physical fitness development. (13)

NORMALIZATION, WATER. The removal of carbon dioxide from water to reduce its corrosive action. (16)

NORTH AMERICAN AIR DEFENSE COMMAND (NORAD). The integrated United States/Canadian command responsible for defending the United States and Canada against aerospace attack. Headquarters is located near Colorado Springs, Colo. (20)

NOTCH. The opening in a dam, spillway, or measuring weir for the passage of water. (16)

NOZZLE. A short conical-shaped tube, used as an outlet for a hose or pipe, the velocity of the emerging stream of water being increased due to the reduction in cross-sectional area of the nozzle. (16)(17)

NRAC. National Resources Analysis Center. (1)

NRC. See NAS/NRC. (1)

NREC. National Resource Evaluation Center. (1)

NSC. National Security Council. (1)

NTMICP. National Topographic Map Inventory Control Point. (1)

NTS. National Traffic System. (1)

NUCLEAR MATERIAL. See Active Material. (3)

NUCLEAR RADIATION. Particulate and electromagnetic radiation emitted from atomic nuclei in various nuclear processes. The important nuclear radiations, from the weapons standpoint, are alpha and beta particles, gamma rays, and neutrons. All nuclear radiations are ionizing radiations, but the reverse is not true; X-rays, for example, are included among ionizing radiations, but they are not nuclear radiations since they do not originate from atomic nuclei. See Ionizing Radiation, X-rays. (11)(8)(20)

NUCLEAR (OR ATOMIC) TESTS. Tests carried out either at the Nevada Test Site or at the Eniwetok Proving Grounds to supply information required for the design and improvement of nuclear (or atomic) weapons and to study the phenomena and effects associated with nuclear (or atomic) explosions. Many of the data presented in this book are based on measurements and observations made at such tests. Information concerning the announced nuclear tests made by the United States, the United Kingdom, the U.S.S.R., and France is summarized in Appendix B. (20)

NUCLEAR WARFARE. A method of warfare utilizing nuclear weapons (or bombs). The A (or atomic) bomb and the H (or hydrogen) bomb are both nuclear weapons. (11)

NUCLEAR WEAPON (ATOMIC BOMB). A general name given to any weapon in which the explosion results from the energy released by reactions involving atomic nuclei, either fission or fusion, or both. Thus, the A- (or atomic) bomb and the H- (or hydrogen) bomb are both nuclear weapons. It would be equally true to call them atomic weapons, since it is the energy of the atomic nuclei that is involved in each case. However, it has become more or less customary, although it is not strictly accurate, to refer to weapons in which all the energy results from fission as A-bombs or atomic bombs. To make a distinction, those weapons in which part, at least, of the energy results from thermonuclear (fusion) reactions among the isotopes of hydrogen have been called H-bombs or hydrogen bombs. (3)(8)(20)

NUCLEON. A constituent of the atomic nucleus; e.g., a proton or neutron. (3)

NUCLEUS. The central core of the atom, about which the orbital extranuclear electrons revolve, composed of protons and neutrons, collectively called neutrons. (8)

The heavy central part of the atom in which most of the mass and the total positive electric charge is concentrated. (3)

The central, positively charged core of the atom which carries essentially all the mass. It consists of neutrons and protons, and the number of protons is the same for all the atomic nuclei (or isotopes) of a given chemical element. The nuclear properties, e.g., radioactive or stable, of an isotope of a given element are determined by both the number of neutrons and the number of protons. (15)

NUCLEUS (OR ATOMIC NUCLEUS). The small, central, positively charged region of an atom which carries essentially all the mass. Except for the nucleus of ordinary (light) hydrogen, which is a single proton, all atomic nuclei contain both protons and neutrons. The number of protons determines the total positive charge, or atomic number; this is the same for all the atomic nuclei of a given chemical element. The total number of neutrons and protons, called the mass number, is closely related to the mass (or weight) of the atom. The nuclei of isotopes of a given element contain the same number of protons, but different numbers of neutrons. They thus have the same atomic number, and so are the same element, but they have different mass numbers (and masses). The nuclear properties, e.g., radioactivity, fission, neutron capture, etc., of an isotope of a given element are determined by both the number of neutrons and the number of protons. See Atom, Element, Isotope, Neutron, Proton. (20)

NUCLIDE. A general term referring to all nuclear species, both stable and unstable, of the chemical elements, as distinguished from the two or more nuclear species of a single chemical element which are called "isotopes". (3)

NUDET. An acronym meaning nuclear detonation. NUDET reports are transmitted with a "Flash" precedence and limited to bare details of where, when, size, air or surface burst. (20)

NUTRIENT. Any substance assimilated by organisms which promotes growth and replacement of cellular constituents. (19)

NWC. National Warning Center. (1)

O

OAIAC. Operational Area Industry Advisory Committee. (1)

OBJECTIVE. An objective is the planned accomplishment of a project or program expressed in definite quantitative and/or qualitative terms of performance and results of the work operations to be accomplished over a short-range period of time, usually a fiscal year. (9)

Is a situation or condition of people or of their environment which is considered by a responsible authority to be desirable to attain or maintain. Frequently, an objective will be stated in terms of change of status of a problem to a specified degree. (21)

A statement of a situation or condition to be brought about within a specified period of time. (13)

A defined end result of specific public health activity, to be achieved in a finite period of time. Objectives are stated as definite aims or goals of action, which should be quantitatively measurable and capable of being reflected in standards performance. Objectives can be long-range, intermediate, and short-range. (9)

OCD. Office of Civil Defense. (1)

OCD FALLOUT SHELTER CRITERIA. A protection factor of 40 or greater; a minimum of 10 square feet of shelter floor space; and 65 cubic feet of space per person. At least 3 cubic feet of fresh air per minute per person when capacity is based upon minimum space requirements. The cubic feet of space per person is increased with decreased ventilation. In unventilated underground space, 500 cubic feet of space per person is required. (20)

OCD PUBLICATIONS INDEX. An OCD publication also referred to as MP-20. Provides general information on OCD publications and printed matter on the U.S. Civil Defense Program, and information as to procedures to obtain this material. (1)

ODOR THRESHOLD. The point at which, after successive dilutions with odorless water, the odor of the water sample can just be detected. The threshold odor is expressed quantitatively by the number of times the sample is diluted with equal quantities of odorless water. (16)

ODR. Office of Defense Resources. (1)

OEC. Office of the Chief of Engineers, U. S. Army. (1)

OEP. Office of Emergency Preparedness. (1)

OET. Office of Emergency Transportation. (1)

OFFICE OF DEFENSE RESOURCES (ODR). It is planned that an Office of Defense Resources, with OEP personnel forming the nucleus staff, will in time of emergency perform central program coordination and policy direction for the management of the Nation's resources. (1)

OFFICE OF EMERGENCY PREPAREDNESS (OEP). Assists the President in coordinating the emergency preparedness activities of the Federal Government and makes plans for the direction of governmental, economic, and other activities as may be determined by the President. (1)

OFFICE OF EMERGENCY TRANSPORTATION (OET). Develops and coordinates overall policies, plans, and procedures for the provision of centralized control of all modes of transportation in an emergency for the movement of passenger and freight traffic of all types. Also, determines the proper apportionment and allocation of the total civil transportation capacity or any portion thereof to meet overall essential needs. (1)

OPERATION. A specific task or series of tasks which when completed advances work to the next operation. (9)

OPERATION ALERT (OPAL). A Government-wide exercise designed to test the Nation's ability to recover from the effects of an enemy attack. (4)(11)

OPERATION PLAN. A description of action to be taken in the face of an anticipated situation, and the method or scheme for taking coordinated action to meet the needs of that situation. It describes action to be taken (who, what, where, when) on the basis of assumptions, objectives, and capabilities. (1)

OPERATIONS. The process of applying resources to events to achieve specific objectives. (1)

OPERATIONS PLANNING. The process of determining the need for application of resources and determining the methods of obtaining and committing these resources to the operations plan. (1)

OPP. Organizational Project Plan. (9)

ORGANIZATIONAL EQUIPMENT. Equipment (other than materials and facilities) determined by OCD to be (1) necessary to a civil defense organization, as distinguished from personal equipment, and (2) of such type or nature as to require it to be financed in whole or in part by the Federal Government. It shall not be construed to include those items which the local community normally utilizes in combating local disasters, except when required in unusual quantities dictated by the requirements of the civil defense plans. (1)

ORIFICE. (1) An opening with closed perimeter, usually sharp edged, and of regular form in a plate, wall, or partition through which water may flow, generally used for the purpose of measurement or control of such water. (2) The end of a small tube, such as a pitot tube, piezometer, etc. (17)(16)

ORIFICE PLATE. A plate containing an orifice. In pipes the plate is usually inserted between a pair of flanges, the orifice being smaller in area than the cross section of the pipe. (17)

OSA. Office of the Secretary of the Army. (1)

OSD. Office of the Secretary of Defense. (1)

OSP. Operational Survival Plan. (1)

OUTCROP, WATER TABLE. A place or location where the water table intersects the ground surface. (17)

OUTPUT MEASURES. Effort expended within each program element in the classification system resulting in certain quantifiable end products. (13)

OVERHAUL. Action of repairing a dismantled pump and its parts before reassembly. (2)

OVERPRESSURE. The transient pressure, usually expressed in pounds per square inch, exceeding the ambient pressure, manifested in the shock (or blast) wave from an explosion. The variation of the overpressure with time depends on the energy yield of the explosion, the distance from the point of burst, and the medium in which the weapon is detonated. The peak overpressure is the maximum value of the overpressure at a given location and is generally experienced at the instant the shock (or blast) wave reaches that location. See Shock Wave. (20) (3) (15)

OVERT. Open; manifest. Overt attack implies the adaptation and use of principles and methods of attack and use of weapons and munitions previously developed, known, and commonly accepted in warfare. See Covert. (6) (7)

P

PA. Public Affairs. (1)

P&A. Personnel and Administrative. (1)

P&O. Planning and Operations. (1)

PACIFIC PROVING GROUNDS. See Eniwetok Proving Grounds. (20)

PACKAGED DISASTER HOSPITAL (PDH). A unit of sufficient medical supplies and equipment to establish a complete 200-bed hospital. These units, owned by the Federal Government, strategically placed throughout the United States, are packed for long term storage to augment medical facilities in time of major disaster. (Previously referred to as Civil Defense Emergency Hospital. (1)

PACKAGED VENTILATION KIT (PVK). A compact, portable ventilation device that can be electrically or pedal operated, for placement in below ground shelter areas for use in an emergency to increase the rated capacity and/or habitability of such shelter. (1)

PACKING. Material placed between rotating and stationary parts of moving elements of pumps, particularly shafts, pistons, etc. (2)

PAD. Permissible accumulated dose. (1)

PAIR PRODUCTION. The process whereby a gamma ray (or X-ray) photon, with energy in excess of 1.02 Mev, in passing near the nucleus of an atom is converted into a positive electron and a negative electron. As a result, the photon ceases to exist. See Photon. (20)(3)

PANDEMICS. Widely epidemic, affecting or attacking all or most of the population of a region. (6)

PARASITES. Plants or animals which live upon or within another living organism at whose expense it grows without giving anything in return. (6)

PATHOGENIC. Disease producing. (16)(17)(19)

PATHOGENS. Disease-producing microorganisms. (6)

PCR. Program Change Request. (1)

PDA. Population drainage area. (1)

PEACETIME DISASTER. Peacetime disaster includes natural disasters as well as explosions, nuclear accidents, aircraft crashes in populated areas, etc. (1)

PEAK OVERPRESSURE. The highest overpressure resulting from the blast wave. Peak overpressures near the fireball of a nuclear explosion are very high, but drop off rapidly as the blast wave travels along the ground outward from ground zero. (3)

PEAK POPULATION. As used in the National Fallout Shelter Survey, the maximum population occupying a Standard Location area at any given time on a normal weekday. The peak population of a city of other area that includes more than one Standard Location area is a summation of the peak populations for each of the Standard Location areas. (1)

Daytime Peak: The maximum population occurring during the daylight hours (8 a.m. to 6 p.m.).

Nightime Peak: The maximum population occurring during the nighttime hours (6 p.m. to 8 a.m.).

PENCIL DOSIMETER. Personnel monitoring instrument that allows for an estimate of cumulative radiation exposure of wearer. (14)

PERCOLATION. (1) The flow or trickling of a liquid downward through a contact or filtering medium. The liquid may or may not fill the pores of the medium. (2) The movement or flow of water through the interstices or the pores of a soil or other porous medium. Also termed Filtration. (16) (17)

PERFORMANCE BUDGET. A system of budgeting where resource activities are equated to program categories or program objectives. This is sometimes referred to as an output-oriented budget. (13)

PERISTALIC PUMP. Pump that consists of flexible tubing alternately squeezed and relaxed by mechanical pressure, usually by rollers, to produce positive displacement of liquid. (2)

PERMEABILITY. The property of a material which permits appreciable movement of water through it when saturated and actuated by hydrostatic pressure of the magnitude normally encountered in natural subsurface water. (17)

The property of a material which permits appreciable movement of water through it when saturated and actuated by hydrostatic pressure of the magnitude normally encountered in natural subsurface water. Perviousness is sometimes used in the same sense as permeability. The rate of permeability is measured by the quantity of water passing through a unit cross section, in a unit time when the gradient of the energy head is unity. (16)

PERSISTENCY. Length of time a war gas normally remains effective (capable of producing casualties among unprotected personnel) in the open at the point of dispersion. (7)

PERSONAL EQUIPMENT. Includes uniforms and accompanying items worn or carried by police, fire, rescue, and other civil defense workers and customarily retained or disposed of by the individual rather than held by the organization for use by other civil defense personnel. (1)

PERSONNEL AND ADMINISTRATIVE EXPENSES PROGRAM (P&A). An OCD program of financial contributions to assist the States and their political subdivisions to develop a capability for non-military defense to meet the needs created by an emergency. (1)

PERT. Program evaluation and review technique. (1)

PETECHIAE. Small, pinpoint, nonraised, round purplish-red spots caused by intradermal or submucous hemorrhage, which later turn blue or yellow. (3)

PF. Protection factor. (1)

PFS. Personal and Family Survival. (1)

pH. See Concentration, Hydrogen Ion. (16)

PHAGOCYTE. Any cell that is active in ingesting and destroying waste and harmful bodies in the blood or tissues. (6)

PHASE. Work elements subordinate to an assigned project. (9)

PHASE I, EOC. This term is used in project applications for Federal contributions for Emergency Operating Centers and in the EOC reporting system. It is the first step to determine the need for, or design requirements for an EOC. It may include a location for an EOC, or preliminary design and final design. (1)

PHASE II, EOC. This term is used in project applications for Federal contributions for EOC's and in the EOC reporting system. It is used to identify an EOC which is under construction and not yet 100 percent complete. (1)

PHASE III, EOC. This term is used in project applications for Federal Contributions for EOC's and in the EOC reporting system. It is used to note that planning for installation of nonfixed EOC equipment is underway, or that installation of nonfixed equipment is less than 10 percent complete. (1)

PHASE I, NFSS. This phase of the NFSS primarily identifies potential fallout shelter areas containing 50 or more spaces in public and private buildings, excluding single-family dwellings. (1)

PHASE II, NFSS. In this phase of the NFSS, a detailed onsite survey is made of large buildings identified in Phase I as having PF's of 40 or higher and suitable for fallout shelter. Also, subsurface enclosures, such as mines, caves, and tunnels were evaluated. (1)

PHOSGENE. Colorless choking gas having an odor of new-mown hay or fresh corn. Non-persistent. (7)

PHOTOELECTRIC EFFECT. A process by which a photon ejects an electron from an atom. All the energy of the photon is absorbed in ejecting the electron and in imparting kinetic energy to it. As a result, the photon ceases to exist. (3)

The process whereby a gamma ray (or X-ray) photon, with energy somewhat greater than that of the binding energy of an electron in an atom, transfers all its energy to the electron which is consequently removed from the atom. Since it has lost all its energy, the photon ceases to exist. See Photon. (20)

PHOTON. A quantity of electromagnetic energy whose value in ergs is the product of its frequency in cycles per second and Planck's constant. (3)

A unit or "particle" of electromagnetic radiation, possessing a quantum of energy which is characteristic of the particular radiation. If v is the frequency of the radiation in cycles per second and λ is the wave length in centimeters*, the energy quantum of the photon in ergs is hv or hc λ, where h is Planck's constant, 6.62×10^{-27} erg-second and c is the velocity of light (3.00×10^{10} centimeters per second). For gamma rays, the photon energy is usually expressed in million electron volt (Mev) units, i.e., $1.24 \times 10^{-10} \lambda$ where λ is in centimeters or $1.24 \times 10^{-20} \lambda$ if λ is in Angstroms. (20)

PHOTOSYNTHESIS. The mechanism by which chlorophyll-bearing plants utilize light energy to produce carbohydrate and oxygen from carbon dioxide and water. (19)

PHS. Public Health Service. (1)

PHYSICAL SECURITY. Security against sabotage, espionage, and other hostile activities, destructive acts and omissions, but excluding security attibutable to operations of military defense. (6)(7)

PI. Public Information. (1)

PIEZOMETER. An instrument for measuring pressure head in a conduit, tank, soil, etc. It usually consists of a small pipe or tube tapped into the side of the container, the inside end being flush with, and normal to, the water face of the container, connected with a manometer pressure gage, mercury or water column, or other device for indicating pressure head. (16)(17)

PIG. A container, usually lead, used to transport and store radioactive materials. The thick walls protect the person handling the sources from nuclear radiation. (1)

PILLOW BLOCK. Device or fixture, rigidly supported, that holds a bearing at one end of a shaft on a movable (hinge) structure. (2)

PILOT VALVE. Small valve in a pump control system for the purpose of directing pressure to one of two parts in a device that will position another valve in a main flow system. (2)

PIO. Public Information Officer. (1)

PIPING. System of pipes. (2)

PISTON PUMP. A variety of reciprocating displacement pumps in which the packing between the piston and cylinder is carried on the piston. (2)

PITOMETER. A device which utilizes the principle of the Pitot tube, and used for determining the velocity of flowing water in closed conduits, usually flowing under pressure. (17)(16)

PILOMETER SURVEY. Survey using a pitometer to determine the velocity of flow of water at various points in the pipe lines of a system. Used extensively to discover waste, leakage, clogging, and the like. (17)

PITOT TUBE. See Tube, Pitot. (16)

Device for measuring velocity of flowing water, using velocity head of the stream as an index. Essentially, an orifice pointing upstream connected to a tube in which rise of water, due to velocity head, can be observed and measured. Can also be built with an upstream and a downstream orifice with two water tubes; difference in height of water columns is the index of velocity. (17)

PITTING. The formation of small holes on metal surfaces due to corrosion. (16)

PL 920. Public Law 920, 81st Congress, Federal Civil Defense Act of 1950. (1)

PLAN. An orderly construction of the major objectives and the steps needed for their achievement. It includes the following three points: Formulation of objectives, assessment of resources available to realize these objectives, preparation of work program to achieve the objectives. (9)

PLANKTON. Small floating or weakly swimming animal and plant life in a body of water. (19)

PLANNING. Is the process of formulating and determining the design of work of an organization. A plan is reduced to writing. It defines the problem, describes the program by identifying the objectives and prescribing activities to be performed, and it provides for implementation and evaluation. (21)

PLANNING DIRECTIVE. A document which translates "concepts of operations" into instructions and general planning assignments. (1)

PLANNING FACTORS (ALSO POLICIES), SHELTER. Facts and assumptions upon which the community shelter plan is based, including time available for movement to shelter, shelter space criteria, population distribution for allocation, mode of travel to shelter, travel rate, and maximum distance to shelter. (1)

PLANNING-PROGRAMMING-BUDGETING (P-P-B). The process by which objectives and resources and the interrelations among them, are taken into account to achieve a coherent and comprehensive program of action for the agency as a whole. It relates input to results and permits insight into the most efficient and effective methods of achievement. (13)

PLASTIC RANGE. The stress range in which a material will not fail when subjected to the action of a force, but will not recover completely, so that a permanent deformation results when the force is removed. Plastic deformation refers to dimensional changes occurring within the plastic range. See Elastic Range. (20)

PLASTIC ZONE. The region beyond the rupture zone associated with crater formation in which there is no visible rupture but in which the soil is permanently deformed and compressed to a high density. See Crater, Rupture Zone. (20)

PLUME. See Column. (20)

PLUNGER PUMP. Reciprocating pump with a plunger that does not come in contact with the cylinder walls but enters the cylinder and withdraws through packing glands, thus alternately creating suction and pressure. (2)

PNEUMATIC EJECTOR. Device for raising or transferring wastewater, sludges, or other materials by alternately admitting the material through an inward-swinging check valve into an airtight pot, and then discharging it through an outward swinging check valve by admitting compressed air to the pot above the liquid. (2)

POI. Program of instruction. (1)

POINT OF ENTRY, EBS. A selected civil defense emergency operating center that will control civil defense programing for the local broadcast (operational) area. (1)

POLICY. The controlling principles of an organization which determines the boundaries of action in the selection of objectives and in the promulgation of the work of the organization. (9)

POLITICAL SUBDIVISIONS. Local governments, including but not limited to cities, towns, incorporated communities, counties, parishes, and townships. (1)

POLLUTION. The addition of sewage, industrial wastes, or other harmful or objectionable material to water. (17)

POPULATION DRAINAGE AREA (ALSO SERVICE AREA). The geographical area from which the population is allocated to a shelter or group of shelters. A population drainage area is determined by either the capacity of the shelter(s) or the established travel distance as modified by the barriers to movement and other local terrain features. (1)

POROSITY. The ratio, usually expressed as a percentage, of (a) the volume of the interstices in a given quantity of material, to (b) the total volume of the material. (16)

POSITIVE DISPLACEMENT PUMP. Pump in which liquid alternately enters and is discharged from a confined area by some mechanical element moving in alternating or rotating direction. (2)

POSITIVE HEAD. Vertical distance above any given point on a selected base line of a system to which pressure of a liquid would cause that liquid to rise in an open-ended tube against atmospheric pressure. Usually measured in feet or inches. (2)

POSITIVE PHASE. See Shock Wave. (20)

POSITRON. A positively charged electron. (3)

POST-ATTACK REHABILITATION. Post-attack activities needed to achieve restoration of vital production and services, including among others, reprogramming of production, reallocation of materials, utilization of manpower, financing of reconstruction, and provision of necessary health, welfare and community services, as a continuation of emergency restorative services. (11)(7)

POTABLE. Water which does not contain objectionable pollution, contamination, minerals, or infection, and is considered satisfactory for domestic consumption. (17)

PRECIPITATION. (1) The total measureable supply of water received directly from clouds, as rain, snow, hail, and sleet; usually expressed as depth in a day, month, or year, and designated as daily, monthly, or annual precipitation. (2) The process by which atmospheric moisture is discharged onto a land or water surface. (3) The phenomenon which occurs when a substance held in solution in a liquid passes out of solution into solid form. (17)

PRE-CHLORINATION. Chlorination of water prior to filtration. (16)

PRECURSOR. An air pressure wave which moves ahead of the main blast wave for some distance as a result of a nuclear (or atomic) explosion of appropriate yield and low burst height over a heat-absorbing (or dusty) surface. The pressure at the precursor front increases more gradually than in a true (or ideal) shock wave, so that the behavior in the precursor region is said to be nonideal. See Blast Wave, Shock Front, Shock Wave. (20)

PRELIMINARY ANALYSIS, CSP. The first step in the community shelter planning process, which is a generalized investigation of the relationship of existing shelters and population. (1)

PREPOSITIONING PROGRAM. A program designed for the safe permanent storage of emergency hospitals, functional units, and other items, at or near the places of eventual use. (11)(17)

PRESSURE. (1) The total load or force upon a surface. (2) In hydraulics the term when used without qualifications usually means pressure per unit area or "intensity" of pressure, for example, pounds per square inch, or kilograms per square centimeter, above local atmospheric pressure. (16)

Total load or force acting on a unit surface. In hydraulics, usually the intensity of force per unit area, as pounds per square inch. Atmospheric pressure is 14.7 psi. Hydrostatic pressure is the total pressure of a body of liquid at rest. Negative pressure is pressure less than atmospheric. (2)

Atmospheric: The pressure exerted by the atmosphere at any point. Such pressure decreases as the elevation of the point above sea level increases. One atmosphere is equal to 14.7 lb per. sq. in., 29.92 in. or 960 mm of mercury column or 33.90 ft of water column at average sea level under standard conditions. Also called Standard Atmospheric Pressure and Standard Pressure. (16)(17)

Hydrostatic: The pressure, expressed as a total quantity or per unit of area, exerted by a body of water at rest. (16) (17)

Ice: Pressure against a dam or other structure located in water, caused by expansion of ice due to a change in temperature. (16)(17)

Negative: A pressure less than the local atmospheric pressure at a given point. (16)(17)

Tank: Airtight tank holding both air and water. Air is compressed and the resulting pressure is transmitted to the water, thus maintaining or increasing pressure in sections of the distribution system. (17)

PRESSURE HEAD. Force per unit area exerted against the walls of a pipe. It is the only part of total head that can be measured by a piezometer pipe, manometer, or pressure gage. (2)

PRESSURE LOSS. Unrecoverable differences in static pressure between two points in a pipe line in which a liquid is flowing. (2)

PRIMARY EOC. A facility with some degree of fallout protection and the necessary communications from which essentially all emergency functions are dictated and controlled by the principal officials of government. (1)

PRIMARY RESOURCES. Those materials and services which by their nature have a national or major interstate use. Primary resources are generally interstate wholesale stocks or manufacturers' inventories. (1)

PRIMING. The first filling of a pump or system with water before operation starts. (2)

PRINTOUT, NFSS. Tabulation of programmed data obtained from the National Fallout Shelter Survey. For a complete glossary of terms and abbreviations associated with the NFSS, refer to the NFSS "Report Formats and Descriptions of Content" published by OCD, November 7, 1962. (1)

PROBLEM. A situation or condition of people or of their environment which either currently or potentially has an adverse effect on people's health or well-being.

a. A need is a problem as defined by responsible program personnel.

b. A want is a problem as defined by an individual or community group not directly associated with the program. It may or may not be considered a problem by responsible program personnel. (21)

PROCEDURE. The prescribed sequence of defined activities required to meet a program objective within the framework of the organization and in line with definite policies. (9)

PROCESSING. Analysis, synthesis, and prognosis of geophysical variables, and preparation of forecasts, advisories, and/or information on earth, oceanic, and atmospheric phenomena that is performed in preparing a product for dissemination. The processing function may be done by manual or automated methods and includes related operations such as data plotting and verification. (9)

PROGRAM. All of the work to be done by an organization to meet a broad area of health need. The program is made up of activities and may involve several related objectives. (9)

Consists of one or more activities (tasks or efforts) which are related to one or more objectives. Program does not specify any particular size or scope of concern. (21)

The second level subdivision of the total ESSA mission into a grouping of related products or services contributing to the achievement of the objectives of a Service. (9)

PROGRAM ACCOMPLISHMENT. A meaningful unit expressed in other than financial terms for measuring the degree of attainment of a program objective. (9)

PROGRAM ACTIVITY. Detail of how the change specified in the program objective will be effected. This is the methodology for bringing about change. It is not the change (objective) and must not be confused with it. (13)

PROGRAM EVALUATION AND REVIEW TECHNIQUE (PERT). This is a management technique used by managers to plan, monitor, and evaluate their projects and programs. A PERT system incorporates a time-oriented, dependency network with a cost-oriented breakdown structure. (17)

PROGRAMING. The process of planning and determining resource requirements for a specified period to achieve a desired ESSA output. Programing facilitates the transition of plans into specific time-phased operations and the timely utilization of resources. (9)

PROGRAM INPUT. The total resources required to produce the program output. (9)

PROGRAM MANAGEMENT. Program management is the process of developing goals; planning, allocating, and controlling required resources; monitoring the work; analyzing the results; and making the changes necessary to assure achievement of objectives and goals of the program. (9)

PROGRAM MANAGER. The individual designated by the major line component head and assigned the authority and responsibility for planning and coordinating the efforts required to achieve the long-range goals and short-range objectives of an ESSA program. (9)

PROGRAM OBJECTIVE. A statement of the amount and kind of change to be effected with a stated period of time or a factor contributing to the cause of a health problem; e.g., immunize 80 percent of high risk population groups against influenza. (13)

PROGRAM OUTPUT. The total accomplishments of a given program. (9)

PROGRAM PACKAGING. Provides the framework for management by objectives. Program package contains all of the essentials necessary to eliminate or ameliorate a health problem. (13)

PROGRAM PAPER. A planning and reporting document which is described in part B, chapter 3, appendix 2 of the Federal Civil Defense Guide. It details the civil defense activities which a State or local government intends to accomplish during a fiscal year to build its civil defense capability, and is required by OCD in order for civil defense jurisdictions to qualify for matching funds. See Turnaround Form. (1)

PROGRAM PLAN. Delineation of activities by program categories and subcategories in terms of output (results) which permit the comparison of benefits to cost. Comparison is provided through a financial plan mechanism based on the same categories, subcategories, and activities breaks. (13)

PROGRAM PLANNING. The process of determining the organization's plan of action to be performed within a specific time interval. It includes the delineation of the program content, objectives, procedures, criteria for evaluation, time-table of activities and coordination with related activities. (9)

PROGRAM STRUCTURE. The program structure is the breakdown or identification (usually in graphic form) of the product-oriented operations required to accomplish the objectives of a program. It concerns the flow of work and executive authority through a system without regard to functional organization structure. It facilitates assignment of responsibilities and provides a basis for uniform planning, reporting, and evaluation of the results. (9)

PROJECT APPLICATION. The method used by States and political subdividions to apply to an OCD Regional Director for Federal contributions for civil defense equipment, supplies, and training courses under provisions of Part F, Chapter 5, Appendix 1 of the Federal Civil Defense Guide. (1)

PROJECT (FEC). An entity of work which may be all or a prescribed portion of the construction and outfitting of a new facility; the purchase of equipment and land; or the alteration, modernization and relocation of existing network facilities. The foregoing includes any or all related costs incurred through the date of actual commissioning or acceptance of the facility and/or equipment, and subsequent costs related to contract settlement matters. (9)

PROJECT MANAGER. The individual assigned the authority and responsibility for planning, directing, and coordinating the efforts of performing organizations required to achieve the specific objective or objectives of a project. (9)

PROJECT (OPERATIONAL). An operational project is an entity of work, usually a distinct part of a program or subprogram, defined by fixed limits of space, time, resources, or funds, with one or more specific objectives to be achieved which contribute to the achievement of the broader objectives of a program or subprogram. (9)

PROJECT (SUPPORT). An operation or function, administrative or supportive in nature, for which costs are accumulated and prorated to ESSA programs as part of the indirect portion of total costs of operational projects. (9)

PROPELLER PUMP. Same as axial-flow pump. (2)

PROPHYLAXIS. Preventive treatment. (6)

PROPORTIONING PUMP. A chemical feeder, the delivery of which can be accurately controlled independently of pressure changes. Usually a reciprocating pump, diaphragm or piston, with an adjustable stroke. (2)

PROTECTED SPACE. An area of a building or other enclosure which provides protection from fallout. Areas having a PF of less than 40, as well as those meeting OCD fallout shelter criteria, are included. (1)

PROTECTION, CATHODIC. An electrical system for prevention of rust, corrosion, and pitting of steel and iron surfaces in contact with water wherein a low-voltage current is made to flow through a liquid or a soil in contact with the metal in such a manner that the external electromotive force renders the metal structure cathodic, and concentrates corrosion on sacrificial anodic parts used for the purpose. (16)

PROTECTION FACTOR. Is the relation between the amount of fallout radiation which would be received by a completely unprotected person compared to the amount which would be received by a person in a shield area. (15)

PROTECTION FACTOR (PF). A number used to express the relationship between the amount of fallout gamma radiation that would be received by a person in a completely unprotected location and the amount that would be received by a person in a protected location. (1)

PROTECTION FACTOR CATEGORIES. The National Fallout Shelter Survey places each shelter space in a category having the following minimum and maximum PF limits: (1)

Category	PF
1	20- 39
2	40- 69
3	70- 99
4	100- 149
5	150- 249
6	250- 499
7	500-1,000
8	Over 1,000

PROTECTIVE CLOTHING. Specialized clothing to prevent contact of BW or CW agents with the skin. There are two types: impermeable, which is air tight; and permeable, treated with a material which destroys or neutralizes the agent, but still allows the passage of air. (6)(7)

PROTECTIVE MASK. A mask completely covering the face for protecting the respiratory system and eyes from BW and CW agents. It normally includes a filter for removing particles and activated charcoal, either incorporated in the filter or in a canister, for removing CW agents from the air. (7)

PROTON. An elementary nuclear particle with a positive electric charge equal numerically to the charge of the electron and having a mass of 1.00759 AMU. (3)

A particle of mass (approximately) unity carrying a unit positive charge; it is identical physically with the nucleus of the ordinary (light) hydrogen atom. All atomic nuclei contain protons. See Nucleus. (8)(20)

PROTOPLASM. A semi-fluid colloidal material comprising the bulk of all animal and plant cells and consisting largely of water, proteins, fats, carbohydrates, and inorganic salts. (19)

PROTOZOA. Small one-celled animals including amoebae, ciliates, and flagellants. (17)(16)

Microscopic unicellular animals. (19)

PSI. Abbreviation for pounds of pressure per square inch. (2)

PSIA. Abbreviation for pounds of pressure per square inch absolute. It is equal to gage pressure plus 14.7 psi. (2)

PSIG. Abbreviation for pounds of pressure per square inch of gage pressure. (2)

PSO. Procurement Services Office. (1)

PUBLIC FALLOUT SHELTER. A shelter facility which contains fallout shelter meeting OCD criteria, for 50 or more persons, and which has been licensed for public use in an emergency. (1)

PUBLIC LAW 875. The law which provides for the use of Federal resources in a major national disaster. It allows the President to designate an agency to coordinate Federal national disaster activities. The Office of Emergency Preparedness has been so designated. (11)(4)

PUBLIC LAW 920. The Civil Defense Act; the law which established the Federal Civil Defense Administration which has been absorbed into the Office of Civil Defense and the Office of Emergency Preparedness. The law forms the basis for Federal and State Civil Defense activities. It provides for the use of Federal Resources in a civil defense emergency. (11)(4)

PUMP. A mechanical device for causing flow, for raising or lifting water or other fluid, or for applying pressure to fluids. (16)(12)

Air-Lift: A pump, used largely in lifting water from wells, where air under pressure is discharged into the water at the bottom of the well in fine bubbles, which mix with the water and reduce the apparent specific gravity of the air-water mixture. The surrounding water causes the resulting mixtures of water and air to rise in the discharge pipe to the outlet. (16)

Booster: A pump installed on a pipe line to raise the pressure of the water on the discharge side of the pump. (16)

Centrifugal: A pump consisting of an impeller fixed on a rotating shaft and enclosed in a casing, having an inlet and a discharge connection. The rotating impeller creates pressure in the liquid by the velocity derived from centrifugal force. (16)

Deep-Well: A pump used for lifting water from deep wells, the pumping mechanism usually being installed within the well at a considerable distance below the surface. The pump may be of the reciprocating or centrifugal type. (16)

Deep-Well Turbine: A centrifugal pump adapted for deep well use, consisting of a series of stages, each stage comprising a set of vanes in a case or bowl. The number of stages increases with the operating head. (16)

Displacement: A type of pump in which the water is induced to flow from the source of supply through an inlet pipe and inlet valve and into the pump chamber by a vacuum created therein by the withdrawal of some physical agency which on its return displaces a certain volume of the water contained in the chamber and forces it to flow through the discharge valves and discharge pipes. (16)

Piston: A reciprocating pump wherein the cylinder is tightly fitted with a reciprocating piston. (16)

Plunger: A reciprocating pump which has a plunger that does not come in contact with the cylinder walls, but enters and withdraws from it through packing glands. Such packing may be outside, inside, or outside the center; according to the design of the pump. (16)

PUMP CAPACITY. Volume of liquid a pump will discharge under given conditions. (2)

PUMP CONTROL. Method of, or device for, controlling pump operation. (2)

PUMP REQUIREMENT. The inlet losses caused by velocity changes in the liquid entering the pump. (2)

PUMP PERFORMANCE TEST. A determination of the operating characteristics and actual performance of a pump with respect to its capacity, discharge head, suction lift, power efficiency, etc. (2)

PUMP STATION. Building or structure housing pumps and associated valves, piping, controls, instruments, suction wells, and other appurtenances. (2)

PUMPAGE. Total quantity of liquid pumped in a given interval, usually a day, month, year. (2)

PUMPING. The elevation at which water stands in a well when the well is being pumped at a given rate. (16)

PUMPING HEAD. Sum of static head and friction head on a pump when it is discharging a given quantity of water. (2)

PURIFICATION. Removal of objectionable matter from water by natural or artificial methods. (17)

PURPOSE. A mission of the health agency which lies behind the establishment of a specific program objective. (9)

PURPURA. A bleeding or hemorrhogic condition characterized by the presence of confluent petechiae or confluent ecchymoses over any part of the body. (3)

PVK. Packaged ventilation kit. (1)

Q

QUANTUM. See Photon. (20)

R

RACES. Radio Amateur Civil Emergency Service. (1)

RAD. A measuring unit of radiation commonly used by the military. It is the amount of absorbed dose equivalent to 100 ergs/gm. of tissue. For civil defense purposes, the terms rad and roentgen are used interchangeably. (1)

Radiation absorbed dose. The basic unit of absorbed dose of ionizing radiation. One rad is equal to the absorption of 100 ergs or radiation energy per gram of matter. For training and operational aspects of nuclear warfare, the rad is the official, authorized unit for use throughout the Army. (3)

RADAR WARNING CIRCUITS (RAWARC). Teletype circuits operated by the Weather Bureau which collect radar and hurricane reports (in most of the United States east of the Rockies) and collects special upper air observations and other data essential to forecasting severe weather. (1)

RADEF. Radiological defense. (1)

RADEF KIT. OCD instruments used to detect and measure the effective nuclear radiation in a location affected by fallout. (1)

RADIANT EXPOSURE. The total amount of thermal radiation energy received per unit area of exposed surface; it is usually expressed in calories per square centimeter. (20)

RADIATION. See Nuclear Radiation, Thermal Radiation. (20)

The emission and propagation of energy through space or through a material medium in the form of electromagnetic waves or discrete particles. (14)

The propagation of energy through matter or space in the form of waves. In nuclear physics the term has been extended to include fast moving particles (alpha and beta particles, free neutrons, etc.). (3)

RADIATION EXPOSURE RECORD. The card issued to individuals for recording their personal radiation exposure doses. (1)

RADIATION INJURY. The harmful effects caused by ionizing radiation. (1)

RADIATION INJURY (OR SYNDROME). See Syndrome Radiation. (20)

RADIATION PROTECTION GUIDE. The total amount of ionizing radiation dose over certain periods of time which may be permitted to persons whose occupation involves exposure to such radiation. It is equivalent to what was formerly called the Maximum Permissible Exposure (or MPE). (20)

RADIATION SICKNESS. The complex of symptoms characterizing the disease known as radiation sickness, resulting from excessive exposure of the whole (or a large part) of the body to ionizing radistion. The earliest of these symptoms are nausea and vomiting, which may be followed by loss of hair, hemorrhage, inflamation of mouth and throat, and general loss of energy. In severe cases, where the radiation exposure has been relatively large, death may occur within two or four weeks. Those who survive six weeks after exposure to a single dose of radiation may generally be expected to recover. (15)

RADIATION SYNDROME. The complex of symptoms characterizing the disease known as radiation sickness, resulting from excessive exposure of the whole (or a large part) of the body to ionizing radiation. The earliest of these symptoms are nausea, vomiting, and diarrhea, which may be followed by loss of hair (epilation), hemorrhage, inflammation of the mouth and throat, and general loss of energy. In severe cases, where the radiation exposure has been relatively large, death may occur within 2 to 4 weeks. Those who survive 6 weeks after the receipt of a single dose or radiation may generally be expected to recover. (11)

RADIO AMATEUR CIVIL EMERGENCY SERVICE (RACES). An emergency service designed to make efficient use of the vast reservoir of skilled radio amateurs throughout the Nation in accordance with approved civil defense communications plans. Many of the States and local governments have federally approved RACES communications plans whereby radio amateurs participating in these plans are permitted to operate during an emergency, or emergency condition. (1)

RADIOACTIVE (OR ATOMIC) CLOUD. An all-inclusive term for the mixture of hot gases, smoke, dust, and other particulate matter from the weapon itself and from the environment, which is carried aloft in conjunction with the rising fireball produced by the detonation of a nuclear (or atomic) weapon. (20)(1)(15)

RADIOACTIVITY. Process whereby certain nuclides undergo spontaneous disintegration in which energy is liberated, generally resulting in the formation of new nuclides. The process is accompanied by the emission of one or more types of radiation, such as alpha particles and gamma photons. (3)

Spontaneous disintegration or nuclear transformation of certain atoms in which energy is released. The process is accompanied by the emission of one or more types of radiation, such as alpha particles, beta particles, and gamma radiation. (8)

The spontaneous emission of radiation, generally alpha, or beta particles, often accompanied by gamma rays, from the nuclei of an (unstable) isotope. As a result of this emission the radioactive isotope is converted (or decays) into the isotope of a different element which may (or may not) also be radioactive. Ultimately, as a result of one or more stages of radioactive decay, a stable (non-radioactive) end product is formed. (11)(20)(15)

RADIOACTIVITY CONCENTRATION GUIDE (RCG). The amount of any specified radioisotope that is acceptable in air and water for continuous consumption. It is equivalent to what was formerly called the Maximum Permissible Concentration (or MPC). (20)

RADIOLOGICAL CONTAMINATION. The deposit of radiological material on the surfaces of structures, areas, objects, animals or persons following a nuclear explosion. This material generally consists of radioactive fallout in which fission products and other bomb debris have become incorporated with particles of dirt, and other debris. (18)(11)

RADIOLOGICAL DEFENSE (RADEF). The organized effort, through warning, detection, and preventive and remedial measures, to minimize the effect of nuclear radiation on people and resources. (1)

RADIOLOGICAL MONITOR. An individual trained to measure, record, and report radiation dose and dose rates; provide limited field guidance on radiation hazards associated with operations to which he is assigned; and perform operator's maintenance of radiological instruments. (1)

RADIOLOGICAL MONITORING. The procedure or operation of locating and measuring radioactive contamination by means of survey instruments which can detect and measure (as dose rates) ionizing radiations. The individual performing the operation is called a monitor. (1)

RADIOLOGICAL MONITORING (RAMONT). RAMONT is used when specifically referring to the radiological monitoring course conducted under the Civil Defense Adult Education (CDAE) Program. (The course contents are the same as other OCD radiological monitoring courses.) (1)

RADIOLOGICAL WARFARE (RW). A method of warfare requiring the use of radioactive materials to contaminate an area so as to render its occupation and utilization hazardous. (11)(4)(8)

RADIONUCLIDES. Atoms which emit radiation. (14)(18)

RADAR WARNING CIRCUITS (RAWAC). Teletype circuits operated by the Weather Bureau which collect radar and hurricane reports (in most of the United States east of the Rockies) and collect special upper air observations and other data essential to forecasting severe weather. (1)

RADIUS, HYDRAULIC. The right cross-sectional area of a stream of water divided by the length of that part of its periphery in contact with its containing conduit; the ratio of area to wetted perimeter. Also called Hydraulic Mean Depth. (16)

RAD. Unit of absorbed dose which is 100 ergs per gram in any medium and equivalent to roentgen for practical purposes. (14)(18)

RAMONT. Radiological monitoring. (1)

R&D. Research and Development. (1)

RANGE (OF O OR B PARTICLES). The distance a particle will penetrate a given material before all of its ionizing power is spent. (3)

RAWARC. Radar warning circuits. (1)

RAPID SAND. A filter for the purification of water where water which has been previously treated, usually by coagulation and sedimentation, is passed downward through a filtering medium consisting of a layer of sand, or prepared anthracite coal, or other suitable material, usually from 24 in. to 30 in. thick resting on a supporting bed of gravel or a porous medium such as carborundum. The filtrate is removed by an underdrainage system which also distributes the wash water; the filter being cleaned periodically by reversing the flow of the water upward through the filtering medium; sometimes supplemented by mechanical or air agitation during wsshing, to remove mud and other impurities which have lodged in the sand. (16)

RAWIN. Radar wind measurements taken by RAWIN observatories (ESSA, Weather Bureau). Upper air fallout (UF) wind reports are calculated from these observatories. (1)

Radar wind sounding. (1)

RBE (or RELATIVE BIOLOGICAL EFFECTIVENESS). The ratio of the number of gamma (or X-) radiation of a certain energy which will produce a specified biological effect to the number of rads of another radiation required to produce the same effect is the RBE or this latter radiation. (20)

The RBE is a factor which is used to compare the biological effectiveness of absorbed radiation doses (i.e., rad) of different types of ionizing radiation. More specifically, it is the ratio of an absorbed dose of X-Rays or y rays to the absorbed dose of a certain particulate radiation or the radiation under investigation required to produce an identical biological effect in a particular experimental organism or tissue. (3)

RCEAC. Regional Civil Emergency Advisory Committee (formerly JRCC, Joint Regional Continuing Committee. (1)

RCDEP. Rural Civil Defense Education Program. (1)

RCDCB. Regional Civil Defense Coordinating Board. (1)

RDO. Radiological Defense Officer. (1)

REASSEMBLY. Action of putting disassembled parts of a pump back together to form complete pump ready for operation. (2)

RECARBONATION. The diffusion of carbon dioxide gas through water to restore the carbon dioxide removed by adding lime to water in water softening. (16)

RECIPROCATING. A type of displacement pump consisting essentially of a closed cylinder containing a piston or plunger, as the displacing mechanism, drawing liquid into the cylinder through an outlet valve. When the piston acts on the liquid in one end of the cylinder the pump is termed Single-Action and when it acts in both ends it is termed Double-Action. (16)

RECIRCULATION. The transfer of activated sludge or trickling filter effluent back to some earlier point in the process, or the transfer of digested sludge or supernatant liquor from one point to another in a digester. (2)

REFLECTION FACTOR. The ratio of the total (reflected) pressure to the incident pressure when a shock (or blast) wave traveling in one medium strikes another. (20)

REFLECTED PRESSURE. The total pressure which results instantaneously at the surface when a shock (or blast) wave traveling in one medium strikes another medium, e.g., at the instant when the front of a blast wave in air strikes the surface of an object or structure. (20)

REGENERATIVE TURBINE PUMP. Centrifugal-type pump in which liquid is recirculated from impeller tips by vanes back to a lower point on the impeller, before it finally leaves the impellers at high discharge heads. (2)

RELIEF VALVE. Valve of special design installed between the discharge shut-off valve in the discharge that opens to a drain, if the pump is started with the discharge valve closed. Also, a valve for releasing air pressure from confined space. (2)

REM. A unit of biological dose of radiation; the name is derived from the initial letters of the term "roentgen equivalent man (or mammal)." The number of rems of radiation is equal to the number of rads absorbed multiplied by the RBE of the given radiation (for a specified effect). See Rad, RBE. (20)

Unit of radiation absorption in man. Used to express human biological doses as a result of exposure to one or many types of radiation. (18)(14)

REMEDIAL MOVEMENT. Movement of people postattack to a less contaminated area or a better protected location. (1)

REMOVABLE CONTAMINATION. Radioactive material on a surface that can be removed easily, i.e., dispersed easily by touching or wiping. (14)

REMOTE PICKUP UNIT (RPU). A radio transmitter/receiver used in conjunction with the Emergency Broadcast System. RPU's are placed in selected EBS stations and protected civil defense Emergency Operating Centers serving as "points of entry" to permit civil defense programing. (1)

REM (ROENTGEN EQUIVALENT MAN). A unit of absorbed dose in biological matter. It is equal to the absorbed dose in rads multiplied by the RBE of the radiation. (3)

REPAIR. Efforts expended in the cure of illness and the return of the individual to a normal state and function. Includes curative medical and dental care in hospitals, nursing homes, outpatient clinics and inpatient's homes. (13)

REP. A unit of absorbed dose or radiation now being replaced by the rad; the name rep is derived from the initial letters of the term "roentgen equivalent physical." Basically, the rep was intended to express the amount of energy absorbed per gram of soft tissue as a result of exposure to 1 roentgen of gamma (of X-) radiation. This is estimated to be about 97 ergs, although the actual value depends on certain experimental data which are not precisely known. The rep is thus defined, in general, as the dose of any ionizing radiation which results in the absorption of about 97 ergs of energy per gram of soft tissue. For soft tissue, the rep and the rad are essentially the same. See Rad, Roentgen. (20)

REPORTING POINT. A point in the sequence of operations within a program and its components at which reports are made. (9)

REQUIREMENT. The need or demand usually in specific geographic areas for resources, by specified quantities for specific periods of time or at specified times. (4)(11)

RESERVOIR. Natural or artificial body used to store, regulate, and control water. (17)

RESIDUAL NUCLEAR RADIATION. Nuclear radiation, chiefly beta particles and gamma rays, which persists for some time following a nuclear (or atomic) explosion. The radiation is emitted mainly by the fission products and other bomb residues in the fallout, and to some extent by earth and water constituents, and other materials, in which radioactivity has been induced by the capture of neutrons. See Fallout, Induced Radioactivity, Initial Nuclear Radiation. (20)(11)(15)(3)(1)

RESIDENTIAL. Refers to domestic consumption in residential areas. (10)

RESISTANCE. The ability of the individual to ward off infection. (6)

RESOURCE DEFICIENCY. Quantitative shortage of a resource after relating postattack requirement to the available postattack supply. (11)(4)

RESOURCE EVALUATION. The process of estimating for specific postattack time periods and for various geographic areas the availability and need for surviving resources and the interrelationships between resource categories. This process consists of (1) requirement estimation (determination of quantitative requirements for emergency health and related resources and services and for supporting goods and services), and (2) supply-requirements analysis (determination of specific resource deficiencies and geographic imbalances). (12)

RESOURCES. Resources are the men, money and materials available to the program. (21)

Are the things used in the achievement of program objectives. These include: manpower, facilities, equipment, materials, and supplies translated ultimately into dollar values. (9)

The means available to a person, an organization, a Nation, etc., for the achievement of an end or for carrying out a function or mission. (11)(4)

RESPIRATION. The mechanism by which living organisms utilize organic materials for the production of energy. (19)

RESPIRATORY QUOTIENT. Molecular ratio of the carbon dioxide expired to the oxygen inspired. (19)

RFO. Regional Field Officer. (1)

RFQ. Request for quotation. (1)

RIAC. Regional Industry Advisory Committee. (1)

RICKETTSIAE. One-celled parasitic microorganisms, probably intermediate in size between the bacteria and viruses. (6)

RMI. Radiological Monitoring for Instructors. (1)

R/HR. Roentgens per hour. (1)

RIPRAP. Broken stone or boulders placed compactly or irregularly on dams, levees, dikes, etc., for protection of earth surfaces against the action of water. (17)(16)

RIPARIAN. An adjective pertaining to anything connected with or adjacent to the banks of a stream or other body of water. (16)

ROENTGEN. A unit of exposure dose of gamma (or X) radiation. It is defined precisely as the quantity of gamma (or X) radiation such that the associated corpuscular emission per 0.001293 gram of air produces, in air, ions carrying one electrostatic unit quantity of electricity of either sign. From the accepted value (34 electron volts) for the energy lost by an electron in producing a positive-negative ion pair in air, it is estimated that 1 roentgen of gamma (or X) radiation, would result in the absorption of about 87 ergs of energy per gram of air. (20)

ROENTGEN (R). An exposure dose of X or y radiation such that the associated corpuscular emission (i.e., electrons) per 0.001293 grams of air produces, in air, ions carrying 1 esu of electricity of either sign. (3)

ROTARY. A type of displacement pump consisting essentially of elements rotating in a pump case which they closely fit. The rotation of these elements alternately draws in and discharges the water being pumped. Such pumps act with neither suction nor discharge valves, operate at almost any speed, and do not depend on centrifugal forces to lift the water. (16)

Drilling a well by rotating a bit in the hold; knives or hard material in the bottom of the bit cut the rock. Waste material is carried away by water or mud forced down the inside of the drill pipe and up the outside. A core of solid material is usually left inside the drill pipe. (17)

ROTARY PUMP. Displacement pump consisting essentially of elements rotating in a circular case in which they fit closely, the rotation alternately drawing and discharging water, without either suction or discharge valves, and not depending on centrifugal force. (2)

ROUTE TECHNIQUE. An aerial radiological monitoring procedure in which a course is flown between two points along a distinct terrain feature such as a highway, railroad, or powerline, taking dose rate readings at equal intervals, or over specified landmarks. (1)

RPU. Remote pickup unit. (1)

RUBBISH. Miscellaneous waste materials from domestic, trading, and industrial activities which are not classed as garbage or ashes. (19)

RUNOFF. (1) That part of the precipitation which reaches a stream, drain, or sewer. (2) Total discharge of (1) during a specific time. (11)(16)

RUPTURE ZONE. The region immediately adjacent to the crater boundary in which the stresses produced by the explosion have exceeded the ultimate strength of the medium. It is characterized by the appearance of numerous radial cracks of various sizes. See Crater, Plastic Zone. (20)

RURAL CIVIL DEFENSE EDUCATION PROGRAM (RCDEP). Designed to inform and instruct rural families in measures or personal survival in time of nuclear attack, and in the protection of their livestock, feed, water, and foodstuffs from radioactive fallout. Informational materials are readily available through the State co-operative extension offices and county agents, Department of Agriculture. (1)

RURAL CIVIL DEFENSE. The emergency preparedness functions and responsibilities assigned to the U. S. Department of Agriculture under Executive Orders 10958 and 10998 encompassing food and all related farm resources. It includes the development of resource studies, requirement analyses, development of priority, allocation and distribution plans, the development of control and use plans for production, processing, and storage facilities, salvage and rehabilitation plans, claimancy plans, stockpiles, and technical guidance to State and local governments. (1)

S

SABOTAGE. Any action taken deliberately by an agent or sympathizer of one country, coalition, or faction to impede, obstruct, or interrupt normal processes of production, or the regular work of employees, or the scheduled build-up of a war effort within an area controlled by another country, coalition, or faction. The damage resulting from such action. (6)(7)

SAF. Shielding analysis form. (1)

SAFETY VALVE. Valve that automatically opens when prescribed conditions, usually pressure, are exceeded in a pipe line; used to prevent damage from excess pressure. (2)

SAGE. Semiautomatic ground environment. (1)

SALINITY TERM. A value introduced in the equation for computing the equilibrium pH of a water to adjust for the use of concentration terms for activities. (19)

SALTED WEAPON. A nuclear weapon which has, in addition to its normal components, certain elements or isotopes which capture neutrons at the time of the explosion and produce radioactive products over and above the usual radioactive weapon debris. (20)

SAMPLING PUMP. A small pump used to obtain samples of water or wastes from any point on a system, or in a treatment plant, and to deliver that sample to a selected point. (2)

SANITARY SURVEY. Study of environmental conditions of a water source which might affect its potability or safety. (17)

SARDA. State and Regional Defense Airlift. (1)

SAR. Search and rescue. (1)

SASP. State Agency for Surplus Property. (1)

SATURATION INDEX. The differences between the measured pH of a water and that pH at which the water would be if it were in equilibrium with the normal carbonates, bicarbonates, and carbon dioxide held in solution. (19)

SCALE. An accumulation of solid material, precipitated out of waters containing certain mineral salts in solution, and formed on the interior surfaces of pipe lines, tanks, boilers, etc., under certain physical conditions. (16)

SCALE, BOILER. An incrustation varying from a porous, friable crust to a dense, very hard coating deposited on boiler heating surfaces due to precipitation of minerals out of solution from the water used. (17)

SCALING LAW. A mathematical relationship which permits the effects of a nuclear (or atomic) explosion of given energy yield to be determined as a function of distance from the explosion (or from ground zero), provided the corresponding effect is known as a function of distance for a reference explosion; e.g., of 1-kiloton energy yield. (1)(20)

SCATANA. Security control of air traffic and air navigation aids. (1)

SCAT. Security control of air traffic. (1)

SCATTERING. Change of direction of sub-atomic particles or photons as a result of a collision or interaction. (3)

The diversion of radiation, either thermal or nuclear, from its original path as a result of interactions or collisions with atoms, molecules, or larger particles in the atmosphere or other medium between the source of the radiation, e.g., a nuclear explosion, and a point at some distance away. As a result of scattering, radiations, especially gamma rays snd neutrons, will be received at such a point from many directions instead of only from the direction of the source. (8)(1)(20)

SCAVENGING. The selective removal of material from the radioactive cloud from a nuclear explosion by inert substances, such as earth or water, introduced into the fireball. The term is also applied to the process of removal of fallout particles from the atmosphere by rain or snow. (20)

SCD. State Civil Defense. (1)

SC. Staff College. (1)

SCH. Shelter Complex Headquarters. (1)

SCHEDULING. The logical, time-phased order of applying allocated resources by assigned organizational components which reflects efficient resource utilization in the accomplishment of program, subprogram and project objectives. (9)

SCREEN, WELL. A special form of slotted or perforated well casing that admits water from an aquifer consisting of unconsolidated granular material, while preventing the granular material from entering the well. (16)

SE&T. Supplies, equipment, and training. (1)

SECDEF. Secretary of Defense. (1)

SECONDARY BLAST INJURIES. Those injuries sustained from the indirect blast effects, such as from falling rubble from a collapsed building or from missiles (debris or objects) which have been picked up by the winds generated and hurled against an individual. Also includes injuries resulting from individuals being hurled against stationary objects. (Sometimes referred to as tertiary effect). (3)

SECOND-FOOT. Term used to express rate of flow of water; contraction of cubic foot per second. (17)

SECURITY CONTROL OF AIR TRAFFIC (SCAT). Rules and procedures to effect, when necessary, the ready identification, location, and control of civil and military air traffic in the interest of national security. (1)

SECURITY CONTROL OF AIR TRAFFIC AND AIR NAVIGATIONAL AIDS (SCATANA). A short title for the "Joint DOD/FAA/FCC Plan for the Security Control of Air Traffic and Air Navigational Aids." Full SCATANA is the term used to notify FAA and appropriate aeronautical facilities that the NORAD region commander is grounding and/or diverting air traffic consistent with his authority and under this plan, and is directing the control of air navigational aids. (Formerly called SCATER). (1)

SEDIMENTATION. The process of subsidence and deposition of suspended matter carried by water, sewage, or other liquids, by gravity. It is usually accomplished by reducing the velocity of the liquid below the point where it can transport the suspended material. Also called Settling. (16)(17)

SEMIAUTOMATIC GROUND ENVIRONMENT SYSTEM (SAGE). Utilizes high-speed digital computers to receive, process, and display aerospace surveillance information. (1)

SEP. Student Expense Program. (1)

SERUM GLOBULIN. Antibodies concentrated by fractionation of human plasma, useful in the prophylaxis of measles and epidemic (infectious) jaundice. (6)

SERVICE. The first level subdivision of the total ESSA mission into a grouping of related products and services. (9)

SEVERE DAMAGE. See Damage Classification. (1)

SHEAR WALL. A wall (or partition) designed to take a load in the direction of the plane of the wall, as distinct from later loads perpendicular to the wall. Shear walls may be designed to take lateral loads as well. See Bearing Wall. (20)

SHEAR, WIND. Unless the term "velocity shear" is used, wind shear refers to differences in direction (directional shear) of the wind at different altitudes. It is commonly expressed in degrees per thousand feet (kilofoot). (20)

SHELTER. A habitable structure or space stocked with essential provisions and used to protect its occupants from fallout radiation. (15)

A specially constructed refuge for protecting people, records, or equipment from effects of nuclear attack. May also protect against the effects of Biological Warfare and Chemical Warfare. (8)(6)(7)

SHELTER AREA. The portion(s) of a shelter facility which contain(s) space meeting OCD fallout shelter criteria. (See OCD Fallout Shelter Criteria.) (1)

SHELTER COMPLEX. A natural grouping of shelter facilities defined for planning, administration, and/or operational purposes. Normally, a complex will include a maximum of 25 individual shelter facilities within a circle of one-half mile diameter. (1)

SHELTER COMPLEX HEADQUARTERS (SCH). An individual shelter which serves as an intermediate communications link between the EOC and a prescribed number of shelters in a geographical area. (1)

SHELTER DEVELOPMENT. Planning for the elimination of existing shelter deficits and for future shelter needs in terms of shifts and growth in population and projected changes in existing shelter capability. Planning adheres to Federal criteria regarding appropriate shelter requirements. (1)

SHELTER, EXPEDIENT. A group fallout shelter constructed on a crash basis in a period of crisis. (1)

SHELTER FACILITY. A building or subsurface enclosure, other than a single family home, which contains fallout shelter meeting OCD fallout shelter criteria. (See Fallout Shelter Criteria). (1)

SHELTER, FALLOUT. A habitable structure or space used to protect its occupants from fallout radiation. (1)

SHELTER IMPROVEMENT. Any action that improves the accessibility, habitability, or quality of shelter. (1)

SHELTER LIMIT LINE. On a shelter utilization map, the borderline distinguishing sheltered areas from unsheltered areas. (1)

SHELTER LOCATION MAP. A map prepared in step I-A of the CSP process indicating all shelter facilities of PF categories 2 to 8. (1)

SHELTER MANAGEMENT. The internal organization, administration, and operation of a shelter facility by either pretrained or emergent leadership. (1)

SHELTER OCCUPANCY PERIOD. That period of time during which the radiation hazard is great enough to require persons to remain in shelter. (1)

SHELTER OVERLOAD. The number of people allocated to a shelter facility beyond its capacity as defined by the National Fallout Shelter Survey. (1)

SHELTER SPACE, PLANNED. A planned individual shelter space allotment that may be more or less than the NFSS shelter space requirements of 10 square feet per person. (1)

SHELTER SPACE, SURVEYED. An identified fallout shelter space with a PF of 40 or greater, and meeting OCD fallout shelter criteria in all other respects. (1)

SHELTER, UTILIZATION PLANNING. The process of allocating population to existing fallout shelter space, based on the planning factors and policies established in CSP step I-B. (1)

SHIELDING. Any material or obstruction which attenuates radiation and thus tends to protect personnel from the effects of gamma radiation. A moderately thick layer of any opaque material will provide satisfactory shielding from thermal radiation, but a considerable thickness of material of high density is needed for nuclear radiation shielding. (1)(15)(8)(11)(20)

SHIELDING ANALYSIS FORM. A data collection form used to collect data during a phase I survey of a potential shelter facility. (1)

SHOCK FRONT (OR PRESSURE FRONT). The fairly sharp boundary between the pressure disturbance created by an explosion (in air, water, or earth) and the ambient atmosphere, water, or earth, respectively. It constitutes the front of the shock (or blast) wave. (20)

SHOCK WAVE. A continuously propagated pressure pulse (or wave) in the surrounding medium which may be air, water, or earth, initiated by the expansion of the hot gases produced in an explosion. A shock wave in air is generally referred to as a blast wave, because it resembles and is accompanied by strong, but transient, winds. The duration of a shock (or blast) wave is distinguished by two phases. First there is the positive (or compression) phase during which the pressure rises very sharply to a value that is higher than ambient and then decreases rapidly to the ambient pressure. The positive phase for the dynamic pressure is somewhat longer than for overpressure due to the momentum of the moving air behind the shock front. The duration of the positive phase increases and the maximum (peak) pressure decreases with increasing distance from an explosion of given energy yield. In the second phase, the negative (or suction) phase, the pressure falls below ambient and then returns to the ambient value. The duration of the negative phase is approximately constant throughout the blast wave history and may be several times the duration of the positive phase. Deviations from the ambient pressure during the negative phase are never large and they decrease with increasing distance from the explosion. See Dynamic Pressure, Overpressure. (20)(1)(15)

Immediately after a nuclear explosion, a destructive pressure wave caused by the expansion of hot gases is transmitted outward in all directions. This shock wave behaves like a moving wall of highly compressed air. (8)

SIAC. State Industry Advisory Committee. (1)

SILT. Fine particles of earth, sand, or soil carried in suspension by flowing water. Sometimes includes material rolled along the stream bed. (17)

SILTING, RESERVOIR. The reduction of storage capacity in reservoirs due to the deposition of silt. (16)

SIZE, EFFECTIVE. The diameter of the particles, spherical in shape, all equal in size, and arranged in a given manner, of a hypothetical sample of granular material which would have the same transmission constant as the actual material under consideration. There are a number of methods of determining Effective Size, the most common being that developed by Allen Hazen, which consists of passing the granular material through sieves with varying dimensions of mesh, the effective size being determined from the dimensions of that mesh which will permit 10% of the sample to pass and will retain the remaining 90%. In other words, in this case, the effective size is that for which 10% of the grains are smaller and 90% larger. (16)

SKYSHINE. Radiation, particularly gamma rays from a nuclear explosion, reaching a target from many directions as a result of scattering by the air in the intervening atmosphere. (1)(20)

SLANTING. A design technique which incorporates or enhances the fallout protection in a building without adversely affecting the normal function, appearance, or cost of the building. (1)

SLANT RANGE. The distance from a given location, usually on the earth's surface, to the point at which the explosion occurred. (15)

SLICK. The trace of an advancing shock wave seen on the surface of reasonably calm water as a circle of rapidly increasing size apparently whiter than the surrounding water. It is observed, in particular, following an underwater explosion. (20)

SL OR SLA. Standard location, or standard location area. (1)

SLIP. Leakage that occurs between the discharge and suction sides of a pump through the pump clearances. (2)

SLOW SAND. A filter for the purification of water where water without previous treatment is passed downward through a filtering medium consisting of a layer of sand or other suitable material, usually finer than for a rapid sand filter, and from 24 in. to 40 in. thick. The filtrate is removed by an underdrainage system and the filter is cleaned by scraping off and replacing the clogged layer. It is characterized by a slow rate of filtration, commonly from 3 mgd to 6 mgd per acre of filter area. (16)

SLUDGE CONDITIONING. Treatment of sludge to facilitate moisture removal. (19)

SLUDGE STABILIZATION. An aeration process in which the adsorptive activity of activated sludge is restored. (19)

SLUDGE. The accumulated settled solids deposited from sewage or industrial wastes, raw or treated, in tanks or basins, and containing more or less water to form a semiliquid mass. (17)

SMALLER STRUCTURES SURVEY (SSS). A survey of sheltered space existing in structures smaller than those surveyed under the NFSS but larger than single-family homes. (1)

SMSA. Standard metropolitan statistical area. (1)

SMI. Shelter management instructor. (1)

SM. Student manual, or shelter management. (1)

SOFT CURRENCY. Foreign currencies, available for use in certain friendly foreign countries, deposited to account of U. S. Embassies in the respective countries, through delivery of surplus or emergency agricultural products. Not to be confused with the loan of American dollars through other agencies or circumstances (P. L. 480). (11)(4)

SOFTENING, WATER. The process of removing from water certain mineral substances which produce a condition called Hardness. There are two softening processes in general use: Chemical Precipitation and the Zeolite Process. (16)(17)

SOLENOID. Electromagnetic device for providing electrically induced magnetic force to activate a valve, clutch, or control device. (2)

SOP. Standing operating procedures. (1)

SOUND-LEVEL METER. An instrument to measure the source strength of a sound device. (1)

SOURCE DOCUMENT, ADP. A document from which basic data is extracted. (1)

SOURCE SET. A set of radioactive material that is used in radiological monitor training. Civil Defense Source Sets consist of six cobalt-60 capsules with a total source strength of about 30 millicuries. These are stored and handled from protective lead pigs. (1)

SOURCE STRENGTH, SOUND. To provide a common basis of comparison for various sound devices, OCD has standardized a rating termed the "source strength." This is defined as the sound level in decibels produced at a distance of 100 feet from the device. (1)

SPECIAL FACILITIES, SHELTER. Mines, caverns (including caves), subways, tunnels, underpasses, basement extensions, and other underground facilities. (1)

SPECIFIC GRAVITY. Ratio of the weight of a unit volume of a substance to an equal volume of water under standard conditions. (17)

SPECIFIC GRAVITY, APPARENT. The ratio of the weight of a unit volume of oven-dry soil to that of an equal volume of water under standard conditions. The term may be applied to either undisturbed field samples of soil or samples reworked in the laboratory. (16)

SPECIFIC SPEED. Speed in rpm at which a geometrically similar pump impeller would run if it were of the size to discharge 1.0 gpm against a 1-ft. head. (2)

SPORE. Primitive reproductive bodies or resistant resting cells, produced by some plants and some microorganisms. (6)

SPORES. A non-active, cellular form constructed in such a manner as to be able to survive adverse environmental conditions. (19)

SPRAY DOME. See Dome. (20)

SPILLWAY. A waterway in or about a dam or other hydraulic structure, for the escape of excess water. (16)

SPRING. A surface feature where, without the agency of man, water issues from a rock or soil onto the land or into a body of water, the place of issuance being relatively restricted in size. Springs are classified in accordance with many criteria, including character of water, geologic formation, geographical location, etc. (16)(17)

SSS. Small Structures Survey. (1)

STAGE. The elevation of a water surface above its minimum, or above or below an established low water plane or datum of reference. (16)(17)

STAFF COLLEGE (SC). The OCD Staff College is the major national civil defense training center for the Office of Civil Defense and is responsible for planning, developing, and conducting courses of instruction in a variety of civil defense subject areas. (1)

STAGING AREA, RADIOLOGICAL. Any area or facility serving as a base for decontamination operations. (1)

STANDARD LOCATION AREA (SLA OR SL). A small geographic area identified by an 8 or 9 digit serial number (SL No.) and represented by a pair of geographic coordinates. Generally it is equal to a census tract, enumeration district, or small political juristiction. (1)

STANDARD METROPOLITAN STATISTICAL AREA (SMSA). Areas of the United States defined by the U. S. Bureau of the Budget in five population groups ranging from 50,000 through 1 million or more. (1)

STANDARD OF PERFORMANCE. The prescribed amount and quality of accomplishment, an accepted yardstick with which performance can be measured. A standard of performance may be based upon cost, the output of effort or the public health effect of this effort. (9)

STANDARD OPERATING PROCEDURES (SOP). A set of instructions having the force of a directive, covering those features of operations which lend themselves to a definite or standardized procedure without loss of effectiveness. (1)

STANDARD OR UNIT OF MEASUREMENT. A known quantitative element or component of an operation which is recognized as a completed step, process, or action. (9)

STANDPIPE. A pipe or tank connected to a closed conduit and extending to or above the existing or controlled hydraulic grade line of the conduit. Often installed to provide storage and to afford relief from surges of pressure in the line. (17)

(1) A pipe or tank connected to a closed conduit and extending to or above the hydraulic grade line of the conduit. It is often installed to afford relief from surges of pressure in pipe lines. (2) A tank resting on the ground with height greater than diameter and used for storage of water in distribution systems. (3) A fixed vertical pipe for furnishing water to the upper part of a high building in case of fire. (16)

STARCOM. Strategic Army Communications. (1)

STATE ADMINISTRATION PLAN. A plan submitted by a State describing how it intends to administer the civil defense program of the State and its political subdivisions. The plan is used by OCD as one of the bases for determining the eligibility of the State for contributions. (1)

STATE AGENCY FOR SURPLUS PROPERTY (SASP). The agency located in each State which operates the Surplus Property Program. (1)

STATE AND REGIONAL DEFENSE AIRLIFT (SARDA). The program designed to provide for use during an emergency of civil aircraft other than air carrier aircraft; directed by the Federal Aviation Agency. (1)

STATIC. The elevation of the water table or pressure surface when it is not influenced by pumping or other form of extraction from the ground-water body. It is the level of ground water in a well before pumping. (16)

STATIC HEAD. (1) The total head without deductions for velocity head or losses. (2) The vertical distance between the free level of the source of supply and the point of free discharge, or the level of the free surface. (2)

STERILIZATION. The destruction of all living organisms, ordinarily through the agency of heat or of some chemical. (16)(17)

STRAINER, WELL. See Screen, Well. (16)

A special form of slotted or perforated well casing that admits water from an aquifer consisting of unconsolidated granular material, while preventing the granular material from entering the well. (17)

STRATCOM. U. S. Army Strategic Communications Command. (1)

STRATEGIC WARNING. A notification, or an indication that enemy initiated hostilities may be imminent. The time element may vary from minutes to hours, to days, or more. (1)

STRATOSPHERE. A relatively stable layer of the atmosphere between the tropopause and a height of about 30 miles in which the temperature changes very little (in polar and temperate zones) or increases (in the tropics) with increasing altitudes. In the stratosphere clouds of water never form and there is practically no convection. See Tropopause, Troposphere. (20)

STRATUM. A geological term used to designate a single bed or layer of rock which is more or less homogeneous in character. (16)

STUFFING BOX. Device to prevent leakage by means of packing along a moving part of the pump. (2)

SUBMERGED PUMP. Pump that operates under the surface of the liquid being pumped. (2)

SUBMERGENCE. Depth to which pump inlet is located below the surface of a liquid. (2)

SUBPROGRAM. The third level subdivision of the total ESSA mission into an operation or group of related operations which produce an intermediate or end product contributing to the achievement of the objectives of a Program. Primary functions can be designated as subprograms where appropriate. (9)

SUBPROGRAM MANAGER. The individual designated by the program manager and assigned the authority and responsibility for reducing the subprogram objectives into manageable work "packages" called projects and for determining the organizational components required to achieve the subprogram objectives. (9)

SUCTION. Part of a pump through which liquid enters a pump; also, force provided by pumps for lifting liquids. (2)

Water under negative pressure. Considered that water below pump datum plane. (10)

SUCTION WELL. Structure or tank into which liquid flows to be removed by pump whose suction lines extend into the structure of tank. (2)

SUMP. Tank or pit that receives drainage from dry well in pumping station. (2)

SUMP PUMP. Pump that operates to empty a sump filled with liquid. (2)

SUPERCRITICAL. A term used to describe the state of a given fission system when the quantity of fissionable material is greater than the critical mass under the existing conditions. A highly supercritical system is essential for the production of energy at a very rapid rate so that an explosion may occur. See Critical Mass. (20)

The term applied to fissionable material which has been altered from the critical stage (by a change in its mass, density, or shape or by tamping) to a condition in which the neutrons produced inside the material increase rapidly and uncontrollably to produce a nuclear explosion. The number of fissions increse geometrically, and the neutrons produced thereby will sustain an increasing or multiplying chain reaction. (3)

SUPPORT AREA. A community which provides support, in terms of facilities, supplies, manpower, housing, or other help, to an adjoining community. (11)

SUPPORT EOC. A facility with some degree of fallout protection and the necessary staff and communications to provide direction and control for one or more emergency functions of a community; for example, police, fire, or public works engineering. Some emergency plans may call for Support EOC's to direct and control one or more types of emergency operations in defined geographical areas in the jurisdiction, in support of and reporting to the primary EOC. (1)

SUPPORT SYSTEMS. Operating elements of civil defense not directly a part of the shelter system (and capable of existing independently of it), but which either insure or enhance the survival capability of the shelter system or replace it in the shelter emergence (postattack) period; such elements would include radiological monitoring, communications, traffic control, public order (police), firefighting, rescue, decontamination, medical care, public health, and emergency feeding. (1)

SURFACE BURST. Detonation of explosive ordnance on or close to the ground or water surface. Surface burst of a nuclear bomb is characterized by the fireball touching the ground or water surface. Fallout is a serious effect of surface bursts. See Fallout. (8)

The explosion of a nuclear weapon at the surface of the land or water, or at a height above the surface less than the radius of the fireball at maximum luminosity. Such a detonation results in the maximum amount of early fallout. (15)

The explosion of a nuclear (or atomic) weapon at the surface of the land or water or at a height above the surface less than the radius of the fireball at maximum luminosity (in the second thermal pulse). An explosion in which the weapon is detonated actually on the surface (or within $5W^{0.3}$ feet, where W is the explosion yield in kilotons, above or below the surface) is called a contact surface burst or a true surface burst. See Air Burst. (20)(1)

SURFACE ZERO. See Ground Zero. (20)

SURGE. A momentary increase in flow in an open conduit or pressure in a closed conduit which passes longitudinally along the conduit, due usually to sudden changes in velocity. (17)(16)

SURGE CHAMBER. Tank or portion of a pump especially designed so that when partially filled with air, it will absorb surges or pulsations caused by plunger pumps. (2)

SURGE (OR SURGE PHENOMENA). See Base Surge. (20)

SURPLUS PROPERTY. Property that has exceeded its usefulness to the Federal Government, yet which may have useful life and which is donated by the Federal Government to the States for educational, health, or civil defense purposes. (1)

SURVEY, HYDROGRAPHIC. An instrumental survey to measure and determine characteristics of streams and other bodies of water within an area, including such things as location, areal extent, and depth of water in lakes or the ocean; the width, depth, and course of streams; position and elevation of high water marks; location and depth of wells, etc. (16)

Pitometer: A survey by means of a pitometer to determine the velocity of flow of water at various points in a distribution system, to ascertain waste, leakage, clogging of pipes, etc. (16)

Sanitary: An investigation of any condition affecting the public health. (16)

SURVEY METER. A portable instrument, such as a Geiger counter or ionization chamber, used to detect nuclear radiation and to measure the dose rate. See Monitoring. (8)(20)(11)

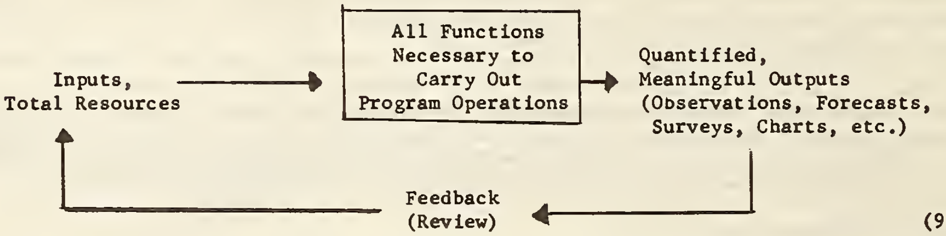
A portable instrument used in radiological monitoring to detect and measure ionizing radiation. (See Radiological Monitoring.) (1)

SURVEY OR MONITOR. Process by which radiation is measured for control purposes. (18)(14)

SYMBIOSIS. The living together in intimate association of two dissimilar organisms. Ordinarily, the term is used in cases where the association is advantageous to one or both organisms. (19)

SYNDROME, RADIATION. The complex of symptoms characterizing the disease known as radiation injury, resulting from excessive exposure of the whole (or a large part) of the body to ionizing radiation. The earliest of these symptoms are nausea, vomiting, and diarrhea, which may be followed by loss of hair (epilation), hemorrhage, inflammation of the mouth and throat, and general loss of energy. In severe cases, where the radiation exposure has been relatively large, death may occur within two to four weeks. Those who survive 6 weeks after the receipt of a single dose or radiation may generally be expected to recover. (20)

SYSTEM. A planned combination of equipment, or men and equipment, related to a common objective and utilizing a set of related procedures to produce desired outputs.



(9)

SYSTEM FRICTION CURVE. Graphical representation of the relation of friction head lost in a system capacity. (2)

SYSTEM HEAD CURVE. Graphical representation of capacity of a system plotted against the head that results from the combination of friction head, static head and difference in pressure in the system. Generally, the sum of static head and friction head. (2)

T

T&E. Training and education. (1)

TABLE, WATER. The upper surface of a zone of saturation, where the body of ground water is not confined by an overlying impermeable formation. Where an overlying confining formation exists, the aquifer in question has no water table. (16)

TACTICAL WARNING. A notification that the enemy has initiated hostilities. Such warning may be received any time from the launching of the attack until the actual attack takes place. (1)

TANK, PRESSURE. A tank used in connection with a water distribution system, either for a single household or for several houses, which is airtight and holds both air and water, and in which the air is compressed, the pressure so created being transmitted to the water. (16)

TARGET GROUP. General or special population at which the program is aimed (i.e., Seamen, Indians, rural Americans). (13)

TECHNICAL SUPPORT. Consists of the functions of specialized technical direction, engineering assistance, quality control and other specialized services generally related to a particular program or several projects. This is usually found in special groups or organizations such as Systems Development Office of the Weather Bureau and Engineering Division of the Coast and Geodetic Survey. (9)

TECHNIQUES. The special skills required for the performance of a specific operation or function. (9)

TELCO. Telephone company. (1)

TELETYPEWRITER EXCHANGE SERVICE (TWX). This service is furnished by the several Bell System telephone companies and other telephone companies within the continental United States and permits teletypewriter communication through communications company switchboards with other TWX subscribers on basis similar to long distance voice telephone service. (1)

TEMPERATURE INVERSION. Increase of temperature of the air with increase of height instead of the usual decrease. This causes a stagnant layer of cool air to be trapped below a layer of warm air, and eliminates the normal vertical currents which tend to dissipate clouds of BW or CW agents. Thus, it is a favorable condition for BW or CW attack. (6)

TENTH-VALUE LAYER (TVL). Amount of shielding material required to reduce radiation intensity by a factor of 10. (3)

TENTH-VALUE THICKNESS. The thickness of a given material which will decrease the amount (or dose) of gamma radiation to one-tenth of the amount incident upon it. Two tenth-value thicknesses will reduce the dose received by a factor of 10 X 10, i.e., 100, and so on. The tenth-value thickness of a given material depends on the gamma-ray energy, but for radiation of a particular energy it is roughly inversely proportional to the density of the material.

TESTS. See Nuclear Tests. (20)

THEORETICAL HORSEPOWER. Calculated horsepower neglecting pump and motor efficiencies and piping friction losses. Neglecting losses, is the foot-pounds of energy to lift a certain quality of water to a specified height above a datum plane. (10)

THEORETICAL OXYGEN DEMAND. The theoretical quantity of oxygen required for the oxidation of an organic material. (19)

THERMAL ENERGY. The energy emitted from the fireball as thermal radiation. The total amount of thermal energy received per unit area at a specified distance from a nuclear (or atomic) explosion is generally expressed in terms of calories per square centimeter. See Radiant Exposure, Thermal Radiation, Transmittance. (20)

THERMAL ENERGY YIELD (OR THERMAL YIELD). The part of the total energy yield of the nuclear (or atomic) explosion which is received as thermal energy usually within a minute or less. In an air burst, the thermal energy is, on the average, about one-third of the total energy of the explosion. For a high-altitude burst, roughly one-fourth of the total yield is received as thermal energy at a distance within about a minute. The thermal energy may be expressed in calories, ergs, or in terms of the TNT equivalent. (20)

THERMAL RADIATION. Electromagnetic radiation emitted from the fireball as a consequence of its very high temperature; it consists essentially of ultraviolet, visible, and infra-red radiation. (3)

Electromagnetic radiation emitted (in two pulses from an air burst) from the fireball as a consequence of its very high temperature; it consists essentially of ultraviolet, visible, and infrared radiations. In the early stages (first pulse of an air burst), when the temperature of the fireball is extremely high, the ultraviolet radiation predominates; in the second pulse, the temperatures are lower and most of the thermal radiation lies in the visible and infrared regions of the spectrum. From a high-altitude burst, the thermal radiation is emitted in a single short pulse. (20)(1)

Radiation emitted from hot materials by virtue of their elevated temperature and consisting of visual light and ultraviolet and infrared (or heat) rays. (8)

THERMAL X-RAYS. The electromagnetic radiation, mainly in the soft (low-energy) X-ray region, emitted by the extremely hot weapon debris in virtue of its extremely high temperature; it is also referred to as the primary thermal radiation. It is the absorption of this radiation by the ambient medium, accompanied by an increase in temperature, which results in the formation of the fireball which then emits thermal radiation. See Weapon Debris, X-rays. (20)

THERMOGENESIS. Evolution of heat. (20)

THERMONUCLEAR. An adjective referring to the process (or processes) in which very high temperatures are used to bring about the fusion of light nuclei, such as those of the hydrogen isotopes (deuterium and tritium), with the accompanying liberation of energy. A thermonuclear bomb is a weapon in which part of the explosion energy results from thermonuclear fusion reactions. The high temperatures required may be obtained by means of a fission explosion. (3)(1)(8)(11)(20)

THERMONUCLEAR WEAPON. A bomb in which part of the explosive energy is obtained from nuclear fusion reactions. The energy ranges from hundreds of thousands to millions of tons of TNT-equivalent. (15)

THERMOPHILIC. A term applied to those organisms that grow best at temperatures ranging from 40 to 65°C. (19)

THICKENING TANK. A sedimentation tank for concentrated suspensions. (19)

THRESHOLD DETECTOR. An element (or isotope) in which radioactivity is induced only by the capture of neutrons having energies in excess of a certain threshold value characteristic of the element (or isotope). Threshold detectors are used to determine the neutron spectrum from a nuclear (or atomic) explosion, i.e., the number of neutrons in various energy ranges. (20)

TIME AVAILABLE FOR MOVEMENT. The maximum estimated time for travel to shelter. The recommended travel time is 30 minutes in urban or suburban areas, and 60 minutes in rural areas. (1)

TNT EQUIVALENT. A measure of the energy released in the detonation of a nuclear weapon, or in the explosion of a given quantity of fissionable material expressed in terms of the quantity of TNT which would release the same amount of energy when it exploded. The TNT equivalent is usually stated in kilotons or megatons. The basis of the TNT equivalence is that the explosion of 1 ton of TNT releases 10^9 calories of energy. The energy equivalent of nuclear weapons can be expressed in other units. The following are equivalent in energy value:

2.2	pounds of uranium 235
20,000	tons of TNT
7,000	tons of coal
23,000,000	kilowatt hours

See Kiloton Energy, Megaton Energy, Yield. (1)(20)(8)(11)

TORQUE-FLOW PUMP. Pump with rotating torque-inducing element that is entirely out of the flow path of the liquid through the pump. (2)

TOTAL HEAD. Sum of individual heads which include friction losses in pipes, fittings, pumps, etc. Expressed in feet. (10)

Difference between the elevation corresponding to the discharge of a pump and the elevation corresponsing to the pressure (negative head) at the suction of a pump, based on the same datum plane, and corrected for the velocity head at both suction and discharge. (2)

TOTAL HEALTH REQUIREMENTS. Estimates or forecasts of the amounts of health resources and other manpower, goods, and services that will be required under specific situations during stated future periods to carry out a particular program, or group of health programs. (12)

TOXIN. Generally any poisonous substance of microbic, vegetable, or animal origin. True toxins are of a proteinlike nature, more or less unstable, require a period of incubation of a latent period to produce symptoms, and induce in suitable animals the formation of specific antitoxins. (6)

TOXOID. Detoxified toxin, changed so that it is no longer poisonous, but still antigenic and produces active immunity when injected. (6)

TRAINING. Provides the training required to support the various programs. Four categories are included: Training - Full-time long-term; Training - Special short courses; Training - Part-time and correspondence; Training - Fellowships. Except for on-the-job training (OJT) which may be considered to be part of the program/project to which it applies, training will be performed at three facilities: In-service; Interagency; or Non-Government. The training categories will be further defined as to the type of training, i.e., supervisory, middle management, executive, technical, scientific, intern, administrative, deck officer, meteorological maintenance (NMMTC); and course designation, i.e., refresher or updating, and all other. Employees' salaries, instructors' salaries, training equipment and supplies, related travel per diem, and tuition fees are included. (9)

TRAINING CADRE. A group of trained health workers who are available to conduct training sessions or orientation seminars for professional groups and the lay public. These workers are brought into active service for the Division of Health Mobilization on a routine basis through the commissioned reserve program or on a consultant basis. (11)(4)

TRANSMITTANCE (ATMOSPHERIC). The fraction (or percentage) of the thermal energy received at a given location after passage through the atmosphere relative to that which would have been received at the same location if no atmosphere were present. (20)

TRAVEL DISTANCE. The maximum estimated distance the general public is expected to be able to travel to shelter within the estimated travel time. The travel distance is based on the reasonable speed possible for the anticipated travel mode, multiplied by the travel time. (1)

TRAVEL MODE. The means of travel to shelter designated by the CSP, based on the characteristics of the local community. (1)

TREATMENT PROCESS. A particular method of accomplishing something, generally involving one or more unit operations and/or unit processes. (19)

TREATMENT SYSTEM. A group of treatment processes arranged in such a way as to provide the desired degree of treatment to a water or waste water. (19)

TREATMENT, THRESHOLD. The prevention of the deposition of calcium carbonate in water after the softening treatment by the addition of a small quantity of sodium hexametaphosphate. (16)

TRIAGE. The sorting of injured preliminary to treatment and care, in terms of type and degree of injury and the subsequent care to be provided. (11)(4)

TRIBUTARY. A stream or other body of water, surface or underground, which contributes its water, even though intermittently and in small quantities, to another and larger stream or body of water. (16)

TRIPLE POINT. The intersection of the incident, reflected, and fused (or Mach) shock fronts accompanying an air burst. The height of the triple point above the surface, i.e., the height of the Mach stem, increases with increasing distance from a given explosion. See Mach Stem. (20)

TRIPLEX PUMP. Reciprocating pump with three single acting cylinders placed next to each other in a line, all connected to the same suction and the same discharge lines with valves so arranged that intake and discharge through the pump are continuous. (2)

TRITIUM. A radioactive isotope of hydrogen, having a mass of 3 units, it is produced in nuclear reactors by the action of neutrons on lithium nuclei. (20)

TRITIUM (T OR ^3H). A radioactive isotope of hydrogen having 1 proton and 2 neutrons in the nucleus. (3)

TROPHIC LEVEL. A link in a food chain. (19)

TROPOPAUSE. The imaginary boundary layer dividing the stratosphere from the lower part of the atmosphere, the troposphere. The tropopause normally occurs at an altitude of about 25,000 to 45,000 feet in polar and temperate zones, and at 55,000 feet in the tropics. (20)

TROPOSPHERE. The region of the atmosphere immediately above the earth's surface and up to the tropopause in which the temperature falls fairly regularly with increasing altitude, clouds form, convection is active, and mixing is more or less complete. (20)

TRUE SURFACE BURST. See Surface Burst. (20)

2W Concept: The concept that the explosion of a weapon of energy yield W on the earth's surface produces blast phenomena identical to those produced by a weapon of twice the yield, i.e., 2W, burst in free air, i.e., away from any reflecting surface. (20)

TSUNAMI. A series of long-period gravity sea or ocean waves sometimes generated by earthquakes, or volcanic explosions in or under the ocean. (1)

TUBE, PITOT. A device for measuring the velocity of flowing water using the velocity head of the stream as an index of velocity. It consists essentially of an orifice held to point upstream in the water, connected with a tube in which the rise of water due to velocity head may be observed and measured. It also may be constructed with an upstream and downstream orifice, with two water columns, in which case the difference in height of water column in the tubes is the index of velocity. (16)

TUBERCULATION. A condition which develops on the interior of pipe lines due to corrosive materials present in the water passing through the pipe and which results in the creation of small, more or less hemispherical lumps (Tubercles) on the walls of the pipe, which increase the friction loss and, by reducing the velocity, also reduce the capacity of the pipe. (19)

Formation of metallic deposits. (19)

TURBIDITY. (1) A condition of a liquid due to fine visible material in suspension, which may not be of sufficient size to be seen as individual particles by the naked eye but which prevents the passage of light through the liquid. (2) A measure of fine suspended matter, usually colloidal, in liquids. (3) (16)

TURBINE. A centrifugal pump where the velocity energy of the water is partially converted into pressure head as it leaves the impeller, by fixed guide vanes. (16)

TURBINE PUMP. Centrifugal-type pump wherein the velocity energy of the water is partially converted into pressure head as it leaves the impeller by fixed guide vanes. (2)

TURNAROUND FORM (OCD FORM 744-A). A computer-prepared form which replaced the combined program paper and progress report from (OCD Form 744) on which data received from localities is entered into an OCD computer, and is then "turned around" by automatically printing out the data on the new form, which is then returned to the originating locality. See Program Paper. (1)

TWX. See Teletypewriter Exchange Service. (1)

U

UF. Upper air fallout wind reports. (1)

ULTRAVIOLET. Electromagnetic radiation of wave length between the shortest visible violet (about 3,850 Angstroms) and soft X-rays (about 100 Angstroms). (20)

UNATTENDED STATION. Remotely located facility, well pump, booster station or sewage lift station, where pump operation is by automatic or supervisory control from a central station. (2)

UNDAMAGED AREA. An area free of blast and thermal damage and relatively free of residual nuclear radiation. The undamaged area contains two types of fallout areas, Restricted and Unrestricted:

(a) Restricted Fallout Area: An operational area, delineated by monitoring, in which the intensity of residual nuclear radiation is sufficient to prevent continuous operations. The perimeter of the area will change with time and with the decay of radiation, and the operations within the area will be governed by the urgency of each individual mission.

(b) Unrestricted Fallout Area: An area in which fallout is less than 10r/hr at H + 1, and any other area in which the lifetime accumulated dosage would not exceed 50 roentgens. (8)

UNDERGROUND BURST. The explosion of a nuclear weapon with its center beneath the surface of the ground. (1)

The explosion of a nuclear (or atomic) weapon with its center more than $5W^{0.3}$feet, where W is the explosion yield in kilotons, beneath the surface of the ground. See also Contained Underground Burst. (20)

UNDERWATER BURST. The explosion of a nuclear weapon with its center beneath the surface of the water. (1)

UNFILLED REQUIREMENT FOR STANDARD SHELTER. A geographical area in which the population exceeds the shelter spaces having a PF of 40 or more. Previously referred to as "shelter deficit" area. (1)

UNIT OPERATION. A physical process which can be clearly distinguished from other processes by the fundamental principles involved. Unlike most unit processes, unit operations can be formulated in rather precise mathematical expressions. (19)

UNIT PROCESS. A chemical or biological process which can be clearly distinguished from other processes by the fundamental principles involved. (19)

UPDATING. Actions that result in a current inventory of shelter space and/or population. Also applies to bringing the latest "state-of-the-art" information to fallout shelter analysts and instructors. (1)

UPGRADING. Any action that results in physical improvement of existing shelter spaces. (1)

UPPER AIR FALLOUT WIND REPORTS (UF). Reports formulated by ESSA Weather Bureau and used to prepare fallout forecasts. (1)

URANIUM. A radioactive element of the chronium group found in combination in pitch-blend and certain other rare minerals, and reduced as a heavy, hard, nickel-white metal. (8)

USAICA. U. S. Army Interagency Communications Agency. (1)

U. S. ARMY STRATEGIC COMMUNICATIONS COMMAND (USASTRATCOM). The principal U. S. Army manager for strategic communications, whose function is to establish, engineer, install, and operate assigned portions of the Strategic Army Communications (STARCOM) and perform other assigned maintenance responsibilities. This includes maintenance and operation of strategic communications for the Office of Civil Defense, including the National Warning System. (1)

USASTRATCOM. U. S. Army Strategic Communications Command. (1)

USCDC. U. S. Civil Defense Council. (1)

USDA. U. S. Department of Agriculture. (1)

UTM. Universal transverse mercator. (1)

V

VACCINATION. Protective inoculation with microorganisms, killed or attenuated; against smallpox by inoculation with vaccinia virus. Also any act of protective inoculation with a virus or bacteria. (6)

VACUUM. Condition existing in a closed space from which all gas, vapor, or other matter has been removed. Commonly applied to a closed space in which pressure is much lower than surrounding atmospheric pressure; any space where negative pressure exists. (17)

VACUUM, PARTIAL. The description of a space condition in which the pressure is less than atmospheric. (16)

VALVE. A device installed in a pipe line for the purpose of controlling the magnitude and direction of flow. It consists essentially of a shell and a disk or plug fitted to the shell. (17)(16)

Altitude valve: A valve which automatically shuts off the flow when the water level reaches a predetermined elevation in an elevated tank, and opens when the pressure on the pump side is less than that on the tank side of the valve. (17)(16)

Check valve: A valve provided with a disk hinged on one edge so that it opens in the direction of normal flow, and closes with reversal of flow. (17)(16)

Gate valve: A valve where the closing element consists of a disk which slides over the opening or cross-sectional area through which water passes, and fits tightly against it. (17)(16)

Needle valve: Valve with a circular outlet through which flow is controlled by a tapered needle extending through the outlet. Withdrawing the needle increases the outlet area; advancing it reduces the area. (17)(16)

VAPORIZATION. The process by which water changes from the liquid or sublimation to the gaseous state. (16)

VECTORS. Carriers, especially an animal or host that carries a pathogen from one host to another, as the malaria-carrying mosquito. (6)

VELOCITY. Rate of movement in a given direction in relation to time. Usually expressed as some linear distance (inches or feet) per unit of time (seconds, minutes or hour). (2)

VELOCITY HEAD. Vertical distance or height, expressed in feet, through which a body must fall freely under force of gravity to obtain the velocity it actually possesses. It is equal to the square of the velocity in ft. per min. divided by two times the acceleration of gravity. (2)

VELOCITY, MEAN. Average velocity of a stream flowing in a channel or conduit at a given cross section or in a given reach. Equals the discharge divided by the cross-sectional area of the section of the average cross-sectional area of the reach. (17)(16)

VENTILABLE SPACES. OCD has developed packaged ventilation kits (PVK's) to increase the capacity of presently "unventilated areas." The shelter spaces which can be added by use of such mechanical means are described as including "ventilable spaces." The PVK's are now simply called ventilation kits (VK's). (1)

VENTING. The escape through the surface to the atmosphere of the gases and other residues formed in a subsurface explosion. (20)

VENTURITUBE. A closed conduit or pipe containing a gradual contraction, which causes a reduction of pressure head, by which the velocity may be determined. The contraction is generally followed, but not necessarily so, by an enlargement to the original size. (17)

VERTICAL TURBINE PUMP. Centrifugal pump in which the pump shaft is in a vertical position. (2)

VESICANT. See Blister Gases. (7)

VIRUS. A minute infectious agent, smaller than bacteria, capable of passing through filters that will retain bacteria and of multiplying only within a living susceptible host cell. (6)

VISIBILITY RANGE (OR VISIBILITY). The horizontal distance (in kilometers or miles) at which a large dark object can just be seen against the horizon sky in daylight. The visibility is related to the clarity of the atmosphere, ranging from 170 miles (280 kilometers) for an exceptionally clear atmosphere to 0.6 mile or less (1.0 kilometer or less) for dense haze or fog. (20)

VOLATILE SOLIDS. Organic fraction of solids. (19)

VOLUMETRIC EFFICIENCY. Delivered capacity per pump cycle expressed as a percentage of the true displacement per cycle. The lower the internal slip the higher the efficiency. (2)

VOLUTE PUMP. Centrifugal pump, with casing made in form of a spiral or volute, as an aid to the partial conversion of the velocity energy of the water as it leaves the impellers into pressure head. (2)

VLF. Very low frequency. (1)

W

WANGENSTEEN SUCTION AND DRAINAGE UNIT. A suction apparatus connected with a duodenal tube for aspirating gas and fluid from the stomach and intestine. The unit supplied with the CDEH is operated manually. (11)

WARNING. The alerting of civil defense forces and the public to the threat of extraordinary danger and the related effects of both enemy caused and natural disasters. (1)

WARNING CENTER. A facility staffed by attack warning officers from which warning will emanate. (1)

WARNING POINT, NAWAS. A facility which receives warnings and other emergency information over NAWAS and which relays this information according to instructions contained in State and local civil defense plans. One warning point in each State is designated the State warning point with the additional responsibility of supervising and controlling that part of NAWAS which is within a State.

Note: With reference to reporting status in OCD program paper form, "warning point" refers to any point in government's jurisdiction where warning is received, either directly or indirectly, from NAWAS and is acted upon. (1)

WASP. War Air Service Program. (1)

WATER, BRACKISH. Water rendered unpalatable due to an excessive chloride content. (16)

Perched: Ground water occurring in a zone of saturation located above the general body of ground water, and separated from it by a zone of impermeable material. (16)

Potable: Water which does not contain objectionable pollution, contamination, minerals, or infection, and is considered satisfactory for domestic consumption. (16)

Red: Rust-colored water; such color is usually due to the presence of ferrous bicarbonate, ferrous sulfate, or ferric sulfate, or dead organisms whose life processes depend on iron and manganese. (16)

Semiperched: Ground water that has a greater pressure head than an underlying body of ground water, from which it is not separated by any unsaturated rock. (16)

Soft: Water with a low content of dissolved mineral, salts of calcium and magnesium. (16)

WATERCOURSE. A channel in which a flow of water occurs, either continuously or intermittently, and if the latter, with some degree of regularity. Such flow must be in a definite direction. Watercourses may be either natural or artificial, and the former may occur either on a surface or underground. A different set of legal principles may apply to rights to use water from different classes of watercourses. (16)

WATER HAMMER. Series of shocks resulting from fluctuations in pressure inside a pipe, caused by decelerating or retarding flow too rapidly. Momentary pressure greatly exceeding static pressure may be produced. (17)

WATER RESOURCE. A source of water supply, existing or potential, either surface (lakes or streams) or ground (wells, springs, infiltration galleries). (4)(11)

WATERSHED. The area contained within a divide above a specified point on a stream. (16)

WATER SUPPLY. Includes the source of water, such as wells, lakes, and streams and the water treatment and distribution system, excepting house service lines and plumbing. Water supply also includes emergency measures of treatment and delivery. (4)(11)

WATER TABLE. Upper surface of a zone of saturation where the ground water is not confined by an overlying impermeable formation. If there is an overlying confining formation, there can be no water table. (16)

WATER UTILITY. The water treatment and distribution system including intake, transmission lines, treatment plant, and distribution system. (2)(12)

WEAK ACID. An acid which when placed in solution dissociates only slightly. (19)

WEAK BASE. A base which when placed in solution dissociates only slightly. (19)

WEAPON, ATOMIC (OR NUCLEAR). See Nuclear Weapon. (20)

WEAPON DEBRIS. The highly radioactive material, consisting of fission products, various products of neutron capture and uranium and plutonium that have escaped fission, remaining after the explosion. (1)(20)

WEAPON EFFECTS. The damage or casualty producing agents, specifically blast, thermal radiation, and nuclear radiation, resulting from a nuclear explosion. (3)

WEAPON RESIDUE. The extremely hot, compressed gaseous residues formed at the instant of the explosion of a nuclear weapon. The temperature is several tens of million degrees (Kelvin) and the pressure is many millions of atmospheres. (20)

WEAPONS SYSTEM. The combination of the weapon, the fire control system, and the carrier. (13)

WEIR, MEASURING. Device which measures flow of water. Generally, a thin vertical plate with a rectangular, trapezoidal, triangular, or other shaped notch at the top. Depth of overflow (head) of water flowing through the notch is an index of rate of flow. (17)

WELL. An artificial excavation that derives water from the interstices of the rocks or soil which it penetrates. (16)

Artesian: A well tapping a confined or artesian aquifier in which the static water stands above the bottom of the confining bed and the top of the aquifer. The term is used to include all wells tapping such basins or aquifers. Those in which the head is insufficient to raise the water to or above the land surface are called Subartesian Wells. (16)

Bored: A well that is excavated by means of an auger (hand or power) as distinguished from one which is dug or drilled. (16)

Brawdown: (1) the change in surface elevation of a body of water as a result of the withdrawal of water therefrom. (2) the lowering of the water surface in a well, and of the water table or piezometric surface adjacent to the well, resulting from the withdrawal of water from the well by pumping. (17)

Data Form: A chronological record of the soil and rock formations which were encountered in the operation of sinking of a well, with either their thickness, or the elevation of the top and bottom of each formation given. It also usually includes statements as to the lithologic composition and water-bearing characteristics of each formation. (16)

Drilled: A well that is excavated wholly or in part by means of a drill (either percussion or rotary) which operates by cutting or by abrasion; the materials are brought to the surface by means of a bailer, sand pump hollow drill tool, or by a hydraulic or self-cleaning method. (16)

Drilling Cable-tool: Drilling a well with a heavy bit which is alternately raised by a cable and allowed to drop, crushing the material which it strikes. Waste is removed from the hole by bailing or sandpumping. (17)

Driven: A well that is constructed by driving a casing, at the end of which there is a drive point, without the use of any drillings, boring, or jetting device. (16) (17)

Flowing: A well that discharges water at the surface without the aid or application of a pump or other lifting device. Flowing wells may be classified, with respect to the agency that produces the flow, into Artesian and Gas Lift Wells. (16)(17)

Point: A device consisting of a perforated metal tube or screen attached to a jetting or driving head end, to permit passage of water. (17)(16)

Record: Concise report containing all available data on a well. In some sections of the country, a record only of fluctuations of water level in a well, with date when each change in elevation was measured.

Tubular: Circular well too small for a man to enter. (17)

WHCA. White House Communications Agency. (1)

WILSON CLOUD CHAMBER. See Condensation Cloud. (20)

WORK UNIT. A measurable product of a work action or series of work actions undertaken by an organization component. A work unit may be the end product itself or a constituent part of an end product. (9)

WORLD-WIDE FALLOUT. See Fallout. (20)

X

X-RAYS. Electromagnetic radiations of high energy having wave lengths shorter than those in the ultraviolet region, i.e., less than 10^{6} cm or 100 Angstroms. As generally produced by X-ray machines, they are bremsstrahlung resulting from the inter-action of electrons of 1 kilo-electron volt or more energy with a metallic target. See Bremsstrahlung, Gamma Rays, Electromagnetic Radiation. (20)

Penetrating electromagnetic radiation having wave lengths shorter than those of visible light. They are usually produced by bombarding a metallic target with fast electrons in a vacuum. (3)

Y

YIELD. An expression for wells which state the output in terms of gallons per minute. This is the actual discharge without depletion of well input. (10)

YIELD (or ENERGY YIELD). The total effective energy released in a nuclear (or atomic) explosion. It is usually expressed in terms of the equivalent tonnage of TNT required to produce the same energy release in an explosion. (3)

The total effective energy released in a nuclear explosion. It is usually expressed in terms of the equivalent tonnage of TNT, required to produce the same energy release in an explosion. The total energy yield is manifested as nuclear radiation, thermal radiation and shock (blast) energy, the actual distribution being dependent upon the medium in which the explosion occurs (primarily) and also upon the type of weapon and the time after detonation. See TNT Equivalent. (8)(1)(20)(15)

YIELD, FUSION. That portion of the total yield of a nuclear detonation attributable to the fusion process. (15)

YIELD, SAFE. The maximum dependable draft which can be made continuously upon a source of water supply (surface or ground water) during a period of years during which the probable driest period or period of greatest deficiency in water supply is likely to occur. Dependability is relative and is a function of storage provided and drought probability. (17)(16)

Z

ZEOLITE. A chemical compound so imperfectly bound together that its composition will change in accordance with the concentration of chemicals in solution in its presence. Zeolites are used in water-softening processes. (16)

In water softening, a filter for removing certain chemical constituents from water by base exchange, where the zeolite takes the places of the filtering medium. (16)

Saturation: That portion of the lithosphere in which the functional interstices of permeable rock or earth are filled with water under hydrostatic pressure, that is pressure in excess of atmospheric pressure. It is the portion of the lithosphere that supplies water to springs and wells. (16)

Water-Producing: See Aquifer. (16)

ZONE OF AERATION. That portion of the lithosphere in which the functional interstices of permeable rock or earth are not (except temporarily) filled with water under hydrostatic pressure; that is, the interstices either are not filled with water or are filled with water that is held by capillarity. (17)

ZONE OF SATURATION. That portion of the lithosphere in which the functional interstices of permeable rock or earth are filled with water under hydrostatic pressure; that is, pressure in excess of atmospheric pressure. It is the portion of the lithosphere that supplies water to springs and wells. (17)

ZOOPLANKTON. The animal fraction of plankton. (19)

ZULU TIME. Mean solar time at the zero meridian of Greenwich, England, used as the basis for standard time throughout the world. See Greenwich Mean Time. (1)

Z (ZULU) TIME. Zero Mean Time - same as Greenwich Mean Time. (1)

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